FUJITSU

PRIMEQUEST 1000 Series

Hardware Installation Manual

Preface

This manual describes the specifications and installation location requirements of PRIMEQUEST 1000 series installation. The manual is intended for system administrators.

For details on the regulatory compliance statements and safety precautions, see the *PRIMEQUEST 1000 Series Safety and Regulatory Information* (C122-E115XA).

Errata and addenda for the manual

The *PRIMEQUEST 1000 Series Errata and Addenda* (C122-E119EN) provides errata and addenda for the manual. Read the *PRIMEQUEST 1000 Series Errata and Addenda* (C122-E119EN) thoroughly in reference to the manual.

For Safe Operation

How to use this manual

This manual contains important information about the safe use of this product. Read the manual thoroughly to understand the information in it before using this product. Be sure to keep this manual in a safe and convenient location for quick reference.

Fujitsu makes every effort to prevent users and bystanders from being injured and to prevent property damage. Be sure to use the product according to the instructions in the manual.

About this product

This product is designed and manufactured for standard applications. Such applications include, but are not limited to, general office work, personal and home use, and general industrial use. The product is not intended for applications that require extremely high levels of safety to be guaranteed (referred to below as "safety-critical" applications). Use of the product for a safety-critical application may present a significant risk of personal injury and/or death. Such applications include, but are not limited to, nuclear reactor control, aircraft flight control, air traffic control, mass transit control, medical life support, and missile launch control. Customers shall not use the product for a safety-critical application without guaranteeing the required level of safety. Customers who plan to use the product in a safety-critical system are requested to consult the Fujitsu sales representatives in charge.

Storage of accessories

Keep the accessories in a safe place because they are required for server operation.

Organization and Notation of This Manual

This section describes the following topics:

- Organization of this manual
- Manuals for the PRIMEQUEST 1000 series
- Related manuals
- Abbreviations
- Notation
- Notation for the CLI (command line interface)
- Notes on notations
- Alert messages
- Product operating environment

- Trademarks

Organization of this manual

This manual is organized as follows.

CHAPTER 1 Installation Information

> Chapter 1 provides various useful information on PRIMEQUEST 1000 series installation. The information includes device configuration details, device outline drawings, installation specifications, and various layout diagrams.

CHAPTER 2 Connection Information

> Chapter 2 describes the cables used with the PRIMEQUEST 1000 series and provides an overview of cable connections.

CHAPTER 3 Notes on Carrying In and Installing the Product

> Chapter 3 provides notes on carrying in and installing the PRIMEQUEST 1000 series server.

APPENDIX A Racks

> Appendix A provides various information on the mounting racks for the PRIMEQUEST 1000 series and PCI_Box.

APPENDIX B UPC Interface

> Appendix B describes the UPC interface that can be used with the PRIMEQUEST 1000 series.

Index

> The index lists keywords and the pages that they refer to, helping readers quickly find the necessary information in the manual.

Manuals for the PRIMEQUEST 1000 series

The following manuals have been prepared to provide you with the information necessary to use the PRIMEQUEST 1000 series.

You can access HTML versions of these manuals at the following sites:

Japanese-language site: http://jp.fujitsu.com/platform/server/primequest/manual/

Global site: http://jp.fujitsu.com/platform/server/primequest/manual-e/

Title	Description	Manual code
PRIMEQUEST 1000 Series Getting Started Guide	Describes what manuals you should read and how to access important information after unpacking the PRIMEQUEST 1000 series server. (This manual comes with the product.)	C122-E114XA
PRIMEQUEST 1000 Series Safety and Regulatory Information	Contains important information required for using the PRIMEQUEST 1000 series safely.	C122-E115XA
PRIMEQUEST 1000 Series Errata and Addenda	Provides errata and addenda for the PRIMEQUEST 1000 series manuals. This manual will be updated as needed.	C122-E119EN
PRIMEQUEST 1000 Series General Description	Describes the functions and features of the PRIMEQUEST 1000 series.	C122-B022EN

Title	Description	Manual code
SPARC Enterprise/ PRIMEQUEST Common Installation Planning Manual	Provides the necessary information and concepts you should understand for installation and facility planning for SPARC Enterprise and PRIMEQUEST installations.	C120-H007EN
PRIMEQUEST 1000 Series Hardware Installation Manual	Includes the specifications of and the installation location requirements for the PRIMEQUEST 1000 series.	C122-H004EN
PRIMEQUEST 1000 Series Installation Manual	Describes how to set up the PRIMEQUEST 1000 series server, including the steps for installation preparation, initialization, and software installation.	C122-E107EN
PRIMEQUEST 1000 Series User Interface Operating Instructions	Describes how to use the Web-UI and UEFI to assure proper operation of the PRIMEQUEST 1000 series server.	C122-E109EN
PRIMEQUEST 1000 Series Administration Manual	Describes how to use tools and software for system administration and how to maintain the system (component replacement and error notification).	C122-E108EN
PRIMEQUEST 1000 Series Tool Reference	Provides information on operation methods and settings, including details on the MMB, PSA, and UEFI functions.	C122-E110EN
PRIMEQUEST 1000 Series Message Reference	Lists the messages that may be displayed when a problem occurs during operation and describes how to respond to them.	C122-E111EN
PRIMEQUEST 1000 Series REMCS Installation Manual	Describes REMCS service installation and operation.	C122-E120EN
PRIMEQUEST 1000 Series Glossary	Defines the PRIMEQUEST 1000 series related terms and abbreviations.	C122-E116EN
PRIMEQUEST 1000 Series SAN Boot Environment Configuration Manual	Gives a revised version of APPENDIX D Configuring the SAN Boot Environment in the *PRIMEQUEST 1000 Series Installation Manual* (C122-E107EN). This manual describes procedures for installing the SAN boot environment and provides the latest information including notes on design.	C122-E155EN

Related manuals

The following manuals relate to the PRIMEQUEST 1000 series.

You can access these manuals at the following site:

http://jp.fujitsu.com/platform/server/primequest/manual-e/

Contact your sales representative for inquiries about the ServerView manuals.

Title	Description	Manual code
ServerView Suite ServerView Operations Manager Quick Installation (Windows)	Describes how to install and start ServerView Operations Manager in a Windows environment.	None
ServerView Suite ServerView Operations Manager Quick Installation (Linux)	Describes how to install and start ServerView Operations Manager in a Linux environment.	None
ServerView Suite ServerView Installation Manager	Describes the installation procedure using ServerView Installation Manager.	None
ServerView Suite ServerView Operations Manager Server Management	Provides an overview of server monitoring using ServerView Operations Manager, and describes the user interface of ServerView Operations Manager.	None
ServerView Suite ServerView RAID Management User Manual	Describes RAID management using ServerView RAID Manager.	None
ServerView Suite Basic Concepts	Describes basic concepts about ServerView Suite.	None
ServerView Operations Manager Installation ServerView Agents for Linux	Describes installation and update installation of ServerView Linux Agent.	None
ServerView Operations Manager Installation ServerView Agents for Windows	Describes installation and update installation of ServerView Windows Agent.	None
ServerView Mission Critical Option User Manual	Describes the necessary functions unique to PRIMEQUEST (notification via the MMB, hot replacement command) and ServerView Mission Critical Option (SVmco), which is required for supporting these functions.	None
ServerView RAID Manager VMware vSphere ESXi 5 Installation Guide	Describes the installation and settings required to use ServerView RAID Manager on the VMware vSphere ESXi 5 server.	None
MegaRAID SAS Software	Provides technical information on using array controllers. Refer to the manual from the SVS-DVD2 supplied with the product or from the following URL:	None

Title	Description	Manual code
	The Fujitsu Technology Solutions manuals server http://manuals.ts.fujitsu.com/index.php?id=0	
MegaRAID SAS Device Driver Installation	Provides technical information on using array controllers. Refer to the manual from the SVS-DVD2 supplied with the product or from the following URL: The Fujitsu Technology Solutions manuals server http://manuals.ts.fujitsu.com/index.php?id=0	None
Modular RAID Controller Installation Guide	Provides technical information on using array controllers. Refer to the manual from the SVS-DVD2 supplied with the product or from the following URL: The Fujitsu Technology Solutions manuals server http://manuals.ts.fujitsu.com/index.php?id=0	None

Abbreviations

This manual uses the following product name abbreviations.

Formal product name	Abbreviation
Red Hat® Enterprise Linux® 5 (for Intel 64)	Linux RHEL5, RHEL
Red Hat® Enterprise Linux® 5 (for x86)	
Red Hat® Enterprise Linux® 6 (for Intel64)	Linux RHEL6, RHEL
Red Hat® Enterprise Linux® 6 (for x86)	
Microsoft® Windows Server® 2003, Standard Edition	Windows Windows Server 2003
Microsoft® Windows Server® 2003, Enterprise Edition	
Microsoft® Windows Server® 2003, Datacenter Edition	
Microsoft® Windows Server® 2003, Standard x64 Edition	
Microsoft® Windows Server® 2003, Enterprise x64 Edition	
Microsoft® Windows Server® 2003, Datacenter x64 Edition	
Microsoft® Windows Server® 2003 R2, Standard Edition	
Microsoft® Windows Server® 2003 R2, Enterprise Edition	
Microsoft® Windows Server® 2003 R2, Datacenter Edition	
Microsoft® Windows Server® 2003 R2, Standard x64 Edition	
Microsoft® Windows Server® 2003 R2, Enterprise x64 Edition	
Microsoft® Windows Server® 2003 R2, Datacenter x64 Edition	

Formal product name	Abbreviation
Microsoft® Windows Server® 2008 Standard	Windows Windows Server 2008
Microsoft® Windows Server® 2008 Enterprise	
Microsoft® Windows Server® 2008 Datacenter	
Microsoft® Windows Server® 2008 R2 Standard	
Microsoft® Windows Server® 2008 R2 Enterprise	
Microsoft® Windows Server® 2008 R2 Datacenter	
VMware vSphere(R) 4	vSphere 4, VMware 4
VMware vSphere(R) 5	vSphere 5, VMware 5
VMware(R) ESX(R) 4	ESX, ESX 4.x
VMware(R) ESXi(TM) 5	ESXi, ESXi 5.x

Notation

This manual uses the following fonts and symbols to express specific types of information.

Font or symbol	Meaning	Example
italics	Title of a manual that you should refer to	See the *PRIMEQUEST 1000 Series Installation Manual* (C122-E107EN).
[ ]	Window names as well as the names of buttons, tabs, and drop-down menus in windows are enclosed in brackets.	Click the [OK] button.

Notation for the CLI (command line interface)

The following notation is used for commands.

Command syntax

Command syntax is represented as follows.
- Variables requiring the entry of a value are enclosed in angle brackets < >.
- Optional elements are enclosed in brackets [ ].
- Options for optional keywords are grouped in | (stroke) separated lists enclosed in brackets [ ].
- Options for required keywords are grouped in | (stroke) separated lists enclosed in braces { }.

Command syntax is written in a box.

Remarks

The command output shown in the PDF manuals may include line feeds at places where there is no line feed symbol (\ at the end of the line).

Notes on notations

- In this manual, the Management Board and MMB firmware are abbreviated as "MMB."
- In this manual, IOBs and GSPBs (LIOBs and LGSPBs within partitions) are collectively referred to as IO Units.
- Screenshots contained in this manual may differ from the actual product screen displays.
- The IP addresses, configuration information, and other such information contained in this manual are display examples and differ from that for actual operation.

Alert messages

This manual uses the following alert messages to prevent users and bystanders from being injured and to prevent property damage.

⚠WARNING	This indicates a hazardous (potentially dangerous) situation that is likely to result in death or serious personal injury if the user does not perform the procedure correctly.
⚠CAUTION	This indicates a hazardous situation that could result in minor or moderate personal injury if the user does not perform the procedure correctly. This also indicates that damage to the product or other property may occur if the user does not perform the procedure correctly.
Important	This indicates information that could help the user use the product more efficiently.

Alert messages in the text

An alert statement follows an alert symbol. An alert statement is indented on both ends to distinguish it from regular text. Similarly, one space line is inserted before and after the alert statement.

⚠WARNING
Only Fujitsu certified service engineers should perform the following tasks on this product and the options provided by Fujitsu. Customers must not perform these tasks under any circumstances. Otherwise, electric shock, injury, or fire may result.
- Newly installing or moving equipment
- Removing the front, rear, and side covers
- Installing and removing built-in options
- Connecting and disconnecting external interface cables
- Maintenance (repair and periodic diagnosis and maintenance)

The List of important alert items table lists important alert items.

Product operating environment

This product is a computer intended for use in a computer room environment. For details on the product operating environment, see this manual.

Note

- If you have a comment or request regarding this manual, or if you find any part of this manual unclear, please take a moment to share it with us by filling in the form at the following webpage, stating your points specifically, and sending the form to us:
  https://www-s.fujitsu.com/global/contact/computing/PRMQST_feedback.html
- The contents of this manual may be revised without prior notice.

- The PDF file of this manual is intended for display using Adobe® Reader® in single page viewing mode at 100% zoom.
- The PRIMEQUEST 1800E2/1800E model supports only 200 V power supply.

Trademarks

- Microsoft, Windows, and Windows Server are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries.
- Linux is a trademark or registered trademark of Linus Torvalds in the United States and other countries.
- Red Hat, RPM, and all Red Hat based trademarks and logos are trademarks or registered trademarks of Red Hat, Inc. in the United States and other countries.
- Intel and Xeon are trademarks or registered trademarks of Intel Corporation.
- Ethernet is a registered trademark of Fuji Xerox Co., Ltd. in Japan and is a registered trademark of Xerox Corp. in the United States and other countries.
- VMware is a trademark or registered trademark of VMware, Inc. in the United States and other countries.
- Xen is a trademark or registered trademark of Citrix Systems, Inc. or its subsidiaries in the United States and other countries.
- Other company names and product names are the trademarks or registered trademarks of their respective owners.
- Trademark indications are omitted for some system and product names in this manual.

Safety Precautions

List of important alert items

This manual does not contain important alert items.

Warning labels

The following warning labels are affixed to this product. These labels are intended for the users of this product.

⚠ CAUTION   Never remove the warning labels.
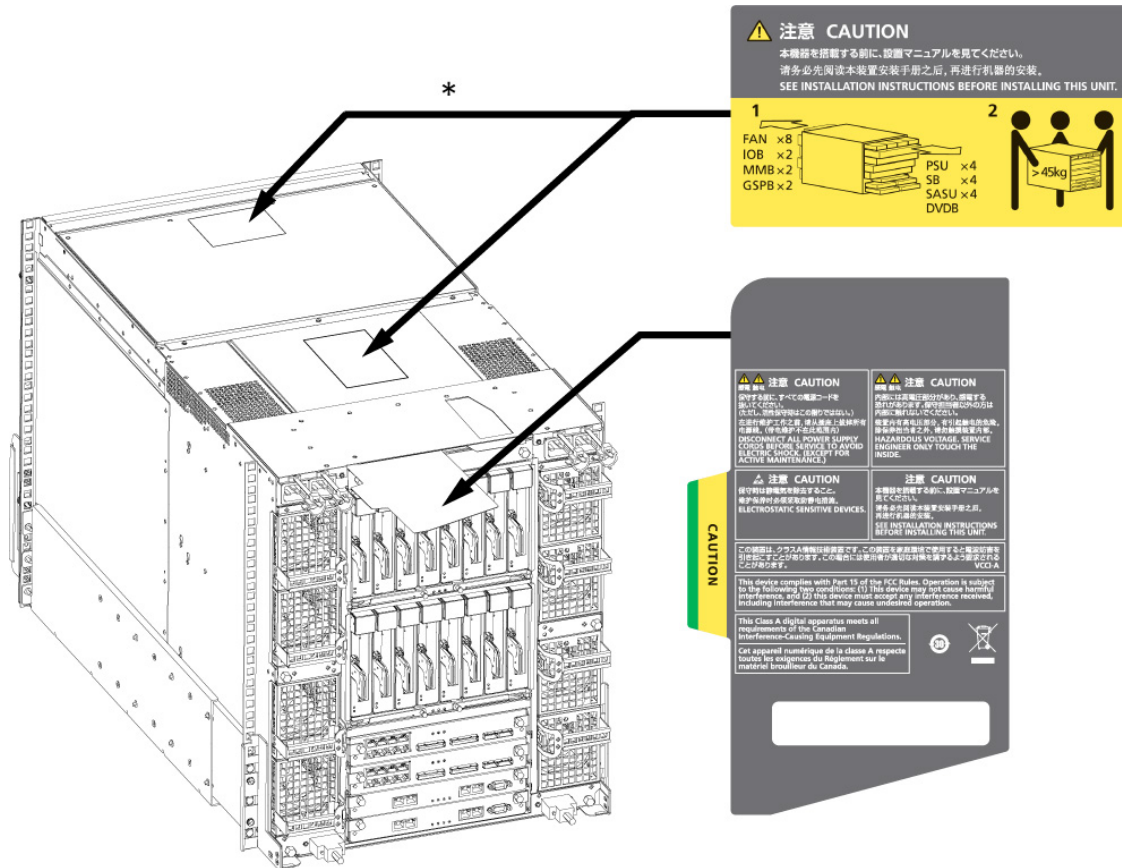
* The label is affixed at either location.
Warning label location (PRIMEQUEST 1800E2/1800E rear)
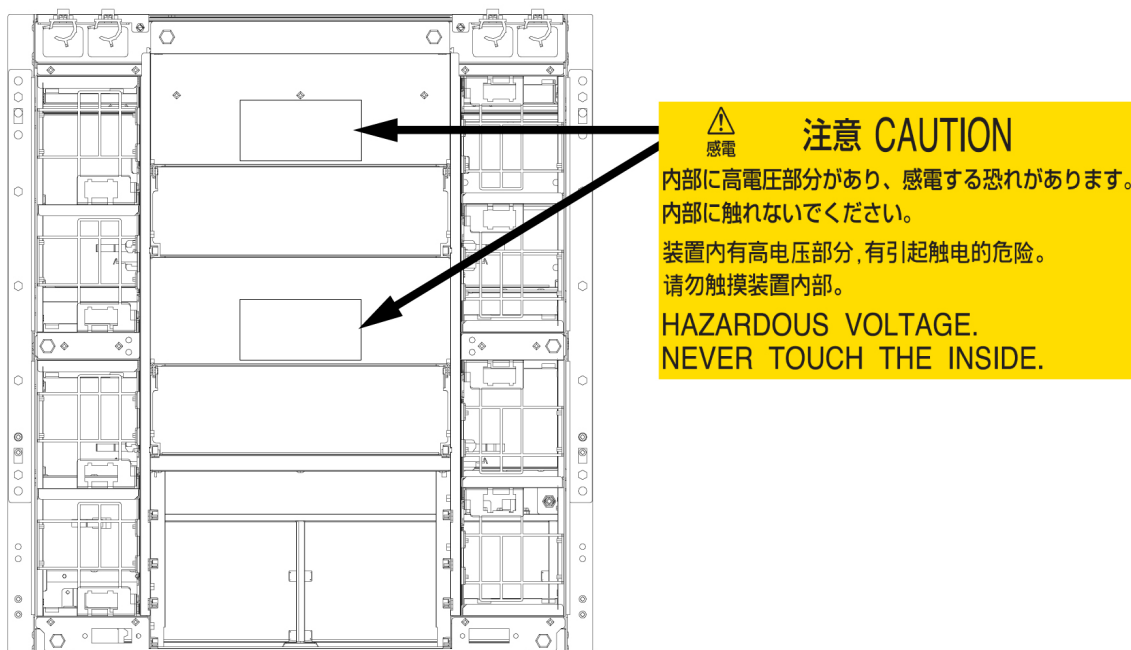
Warning label location (PRIMEQUEST 1800E2/1800E rear) (IOBs removed)
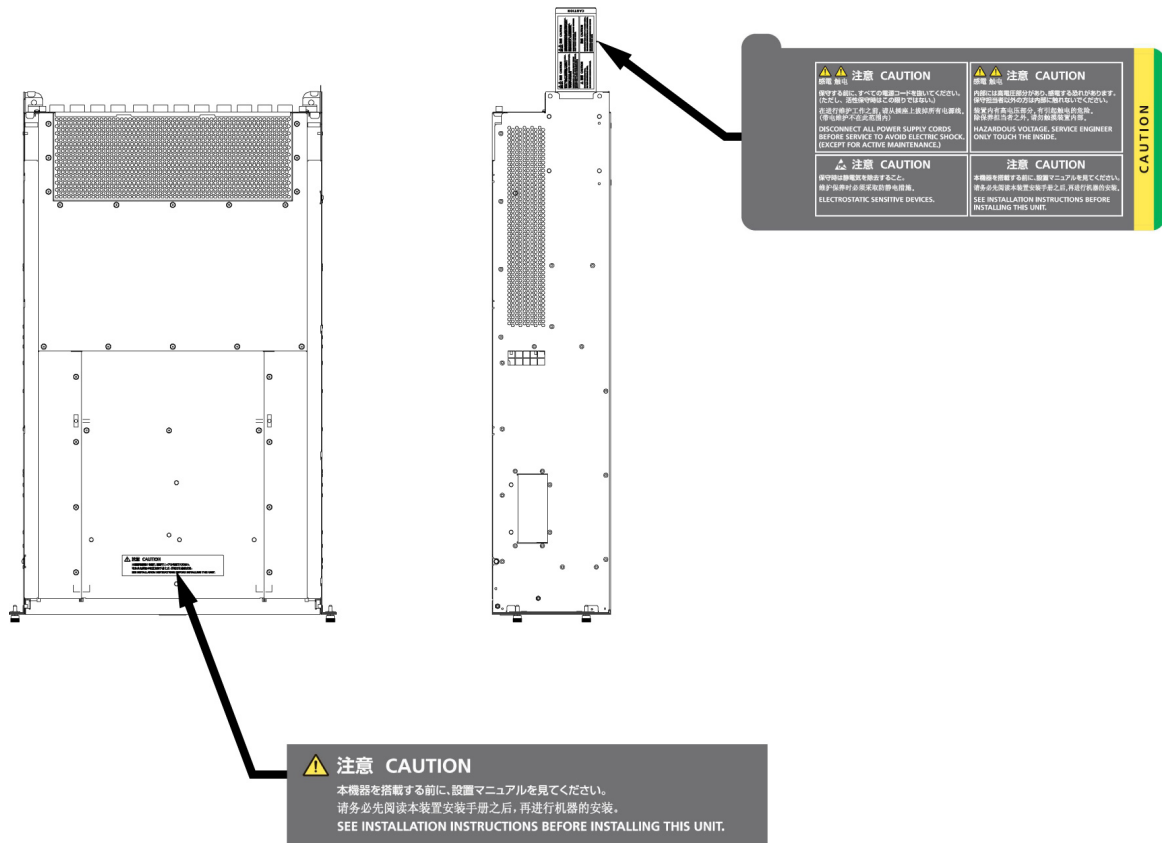
Warning label location (PCI_Box)

Notes on Handling the Product

Adding optional products

For stable operation of the PRIMEQUEST 1000 series server, use only a Fujitsu certified optional product as an added option.

Note that the PRIMEQUEST 1000 series server is not guaranteed to operate with any optional product not certified by Fujitsu.

Maintenance

⚠WARNING   Only Fujitsu certified service engineers should perform the following tasks on this product and the options provided by Fujitsu. Customers must not perform these tasks under any circumstances. Otherwise, electric shock, injury, or fire may result.

- Newly installing or moving equipment
- Removing the front, rear, and side covers
- Installing and removing built-in options
- Connecting and disconnecting external interface cables
- Maintenance (repair and periodic diagnosis and maintenance)

⚠CAUTION   Only Fujitsu certified service engineers should perform the following tasks on this product and the options provided by Fujitsu. Customers must not perform these tasks under any circumstances. Otherwise, product failure may result.

- Unpacking an optional Fujitsu product, such as an optional adapter, delivered to the customer

Modifying or recycling the product

⚠ CAUTION Modifying this product or recycling a secondhand product by overhauling it without prior approval may result in personal injury to users and/or bystanders or damage to the product and/or other property.

Note on erasing data from hard disks when disposing of the product or transferring it

Disposing of this product or transferring it as is may enable third parties to access the data on the hard disk and use it for unforeseen purposes. To prevent the leakage of confidential information and important data, all of the data on the hard disk must be erased before disposal or transfer of the product.

However, it can be difficult to completely erase all of the data from the hard disk. Simply initializing (reformatting) the hard disk or deleting files on the operating system is insufficient to erase the data, even though the data appears at a glance to have been erased. This type of operation only makes it impossible to access the data from the operating system. Malicious third parties can restore this data.

If you save your confidential information or other important data on the hard disk, you should completely erase the data, instead of simply carrying out the aforementioned operation, to prevent the data from being restored.

To prevent important data on the hard disk from being leaked when the product is disposed of or transferred, you will need to take care to erase all the data recorded on the hard disk on your own responsibility.

Furthermore, if a software license agreement restricts the transfer of the software (operating system and application software) on the hard disk in the server or other product to a third party, transferring the product without deleting the software from the hard disk may violate the agreement. Adequate verification from this point of view is also necessary.

Support and service

SupportDesk (available only in Japan, for a fee)

For stable system operation, we recommend concluding our SupportDesk agreement, which provides a maintenance and operation support service. SupportDesk agreement customers receive a same-day response service for hardware problems. They are eligible for regular checkups, remote notification of potential-failure predictions, and information on system problems. Moreover, they can avail themselves of other services such as troubleshooting support by phone for hardware and software problems, and access to operation support information from a dedicated website for our customers. For details, see "Product support" on the SupportDesk homepage (http://jp.fujitsu.com/solutions/support/sdk/index.html).

Product and service inquiries

For all product use and technical inquiries, contact the distributor where you purchased your product, or a Fujitsu sales representative or systems engineer (SE). If you do not know the appropriate contact address for inquiries about the PRIMEQUEST 1000 series, use the Fujitsu contact line.

Fujitsu contact line

We accept Web inquiries. For details, visit our website:

https://www-s.fujitsu.com/global/contact/computing/PRMQST_feedback.html

Warranty

If a component failure occurs during the warranty period, we will repair it free of charge in accordance with the terms of the warranty agreement. For details, see the warranty.

Before requesting a repair

If a problem occurs with the product, confirm the problem by referring to 11.2 Troubleshooting in the *PRIMEQUEST 1000 Series Administration Manual* (C122-E108EN). If the error recurs, contact your sales representative or a field engineer. Confirm the model name and serial number shown on the label affixed to the right front of the device and report it. Also check any other required items beforehand according to 11.2 Troubleshooting in the *PRIMEQUEST 1000 Series Administration Manual* (C122-E108EN). The system settings saved by the customer will be used during maintenance.

Revision History

Edition	Date	Revised location (type) (*)	Description
01	2010-02-09	-	-
02	2010-03-12	All pages	Incorporated differences in *Errata and Addenda* (C122-E119-01EN)
03	2010-08-20	All pages	Incorporated differences in *Errata and Addenda* (C122-E119-02EN to C122-E119-10EN)
04	2011-04-28	All pages	- Added items about 1800E2 - Incorporated differences in *Errata and Addenda* (C122-E119-11EN to C122-E119-18EN)
05	2011-05-31	All pages	Incorporated differences in *Errata and Addenda* (C122-E119-19EN)
06	2011-12-20	All pages	Incorporated differences in *Errata and Addenda* (C122- E119-20EN to C122-E119-24EN)
07	2012-06-19	Chapter 1 and Appendix A	Added items about 19-inch racks (models 2742/2737/2724/2642/2624/2616)

* Chapter, section, and item numbers in the "Revised location" column refer to those in the latest edition of the document. However, a number marked with an asterisk (*) denotes a chapter, section, or item in a previous edition of the document.

Contents

Figures

Tables

CHAPTER 1 Installation Information

This chapter provides various useful information on PRIMEQUEST 1000 series installation. The information includes device configuration details, device outline drawings, installation specifications, and various layout diagrams.

1.1　Device Configuration Details

TABLE 1.1 Device names and configuration details lists device names and configuration details.

TABLE 1.1 Device names and configuration details

Device name	Description of configuration	Size (height)
PRIMEQUEST 1800E2/1800E	Can accommodate up to 4 system boards (up to 8 CPUs) and up to 2 IO boards.	12U
PCI_Box	Expands the number of PCI Express slots. Up to 2 units can be connected to the PRIMEQUEST 1800E2/1800E. The PCI Box has 12 PCI Express slots.	4U

Remarks

All the devices listed in TABLE 1.1 Device names and configuration details can be mounted in EIA-compliant 19-inch racks. For details on the 19-inch racks, see APPENDIX A Racks or contact the distributor where you purchased your product, or your sales representative.

1.2 Outline Drawings of the Devices

This section provides outline drawings of each device.

1.2.1 PRIMEQUEST 1800E2/1800E outline drawings

This section includes outline drawings of the PRIMEQUEST 1800E2/1800E (front, rear, top, and right side views).

PRIMEQUEST 1800E2/1800E (front view)
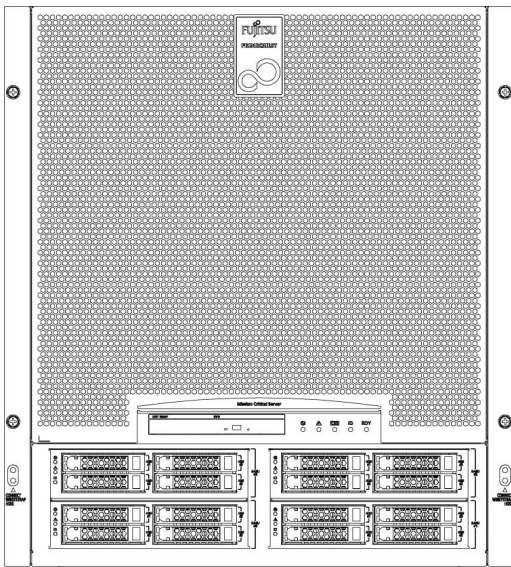
FIGURE 1.1 PRIMEQUEST 1800E2/1800E (front view)

PRIMEQUEST 1800E2/1800E (rear view)
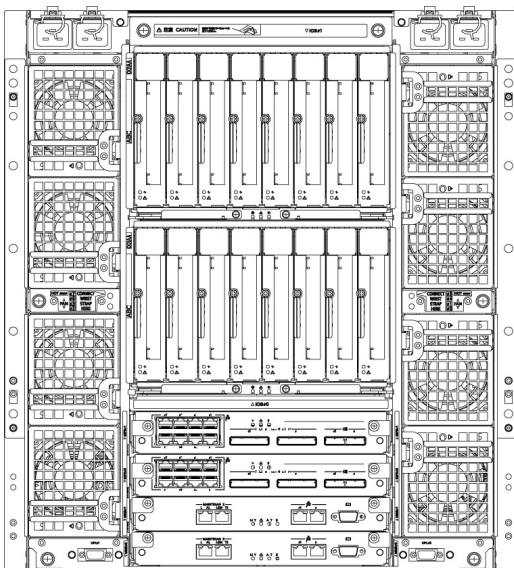
FIGURE 1.2 PRIMEQUEST 1800E2/1800E (rear view)

PRIMEQUEST 1800E2/1800E (top view)
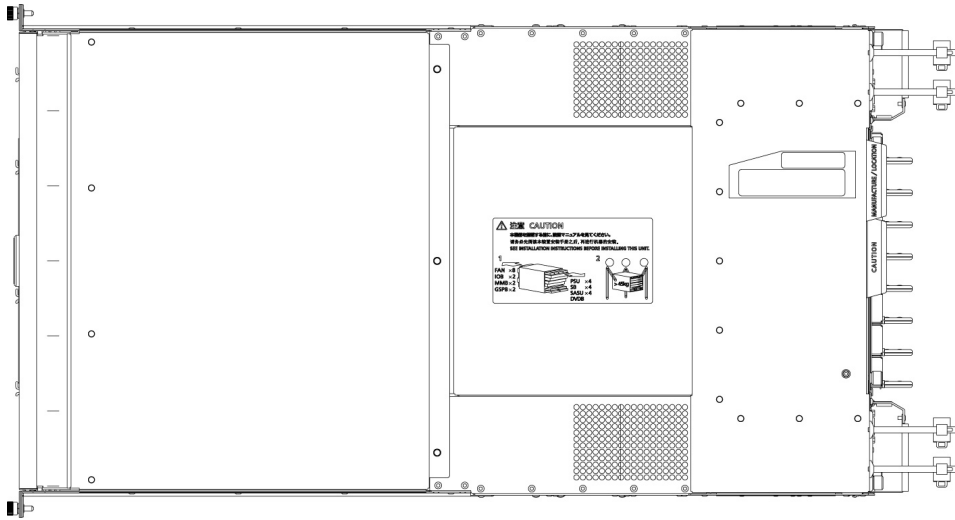
FIGURE 1.3 PRIMEQUEST 1800E2/1800E (top view)

PRIMEQUEST 1800E2/1800E (right side view)
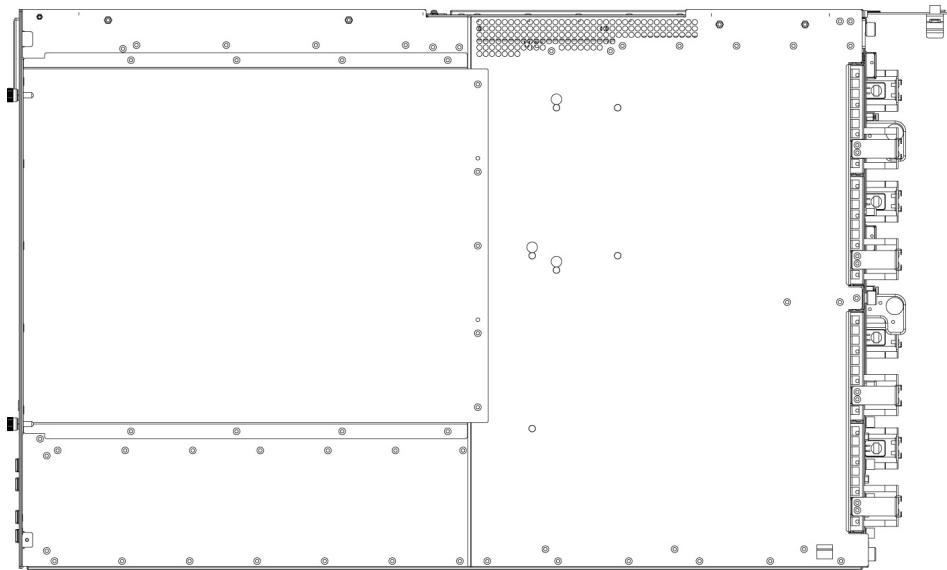
FIGURE 1.4 PRIMEQUEST 1800E2/1800E (right side view)

1.2.2   PCI_Box outline drawings

This section includes outline drawings of the PCI_Box (front, rear, top, and right side views).

PCI_Box front view
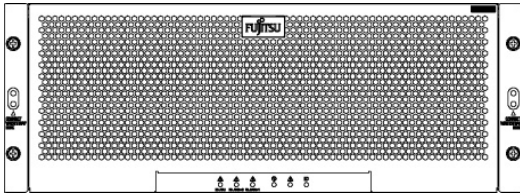
FIGURE 1.5 PCI_Box front view

PCI_Box rear view
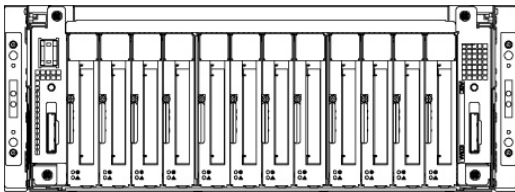
FIGURE 1.6 PCI_Box rear view

PCI_Box top view
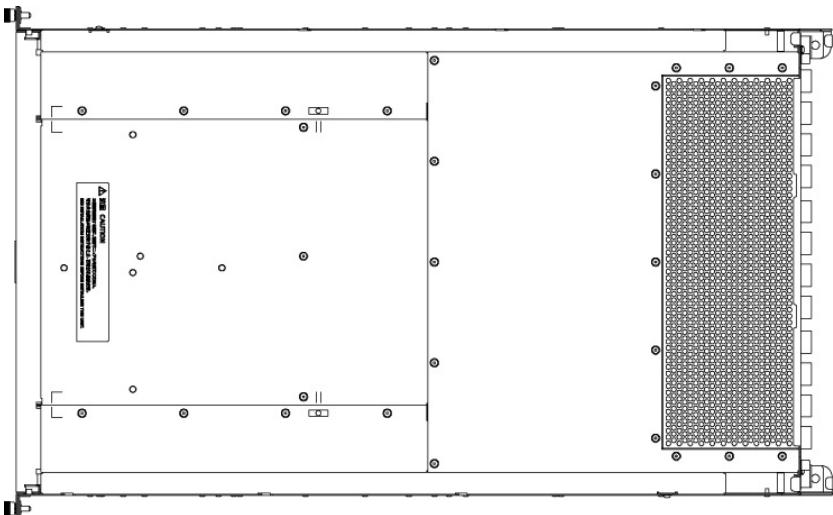
FIGURE 1.7 PCI_Box top view

PCI_Box right side view
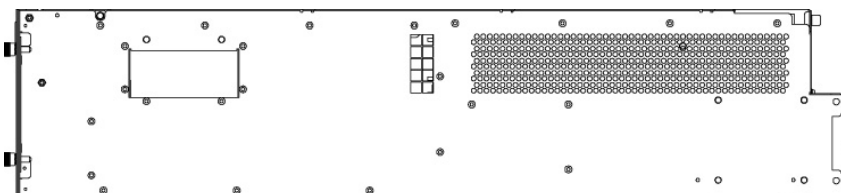
FIGURE 1.8 PCI_Box right side view

1.3　Installation Specifications

This section lists the installation specifications of each device.

1.3.1　PRIMEQUEST 1800E2 installation specifications

TABLE 1.2 PRIMEQUEST 1800E2 installation specifications

Item			Description
External dimensions [mm (in.)]	Width		482 (18.98)
	Depth (*1)		800 (31.50)
	Height		530 (20.87)
Weight [kg (lb)] (*2)			150 (330)
Air conditioning requirements	Maximum heat output [kJ/h (BTU/h)]		14,400 (13,649)
	Exhaust air flow [m^3/min (ft^3/min)] (*3)	FAN at low speed (Low)	14 (494)
		FAN at normal speed (Normal)	21 (742)
		FAN at high speed (High)	24 (848)
	Temperature and humidity requirements (*4)	Operating	Temperature [°C (°F)]	(*5)
			Humidity [%RH]	20 to 80
			Maximum wet-bulb temperature [°C (°F)]	29 (84.2)
		Non-operating (*6)	Temperature [°C (°F)]	0 to 50 (32 to 122)
			Humidity [%RH]	8 to 80
			Maximum wet-bulb temperature [°C (°F)]	29 (84.2)
	Noise [dB] (*7) (*8)		61
	Acoustic power level [B] (*8)		7.8
	Allowable vibration [m/s^2 (gal)]	Operating (including standby state)	4.0 (400) (synthetic seismic waves)
		Non-operating (*9)	10.0 (1000) (synthetic seismic waves)
	Allowable dust concentration [mg/m^3]		0.15
Power requirements	Input voltage and number of phases		200 to 240 VAC ±10% 1φ
	Frequency and fluctuation range		50/60 Hz +2/-4%

Item			Description
Maximum power consumption/ apparent power	Operating	Input voltage: 200 V	4.00 kW / 4.21 kVA
	Standby	Input voltage: 200 V	95 W / 126 VA
Power factor (*10)			0.95 or more
Rush current [A] (Inrush time) (*11)			20 or less
Leakage current [mA] (*12)			3.5 or less

*1 The dimensions do not include protrusions.

*2 The values are for the device with all options installed.

   However, the values do not include the weight of mounted rack-mount rails (7 kg) and cables.

   You can use the following formula to calculate the weight of the device based on its configuration:

> Equipment weight = 86 + (11 x A) + (8 x B) + (2 x C) [kg]

   - A = Number of mounted SBs (1 to 4)
   - B = Number of mounted IO Units (1 or 2)
   - C = Number of mounted expansion power supply units (0 to 2)

*3 If the intake air temperature is high (but within the normal temperature range), the fan enters high-speed mode even when operation is normal.

*4 Condensation is not permitted.

*5 The temperature requirements depend on the altitude at the installation site.

   - Installation at 0 to 500 m (0 to 1640 ft.) above sea level: 5 to 35°C (41 to 95.0°F)
   - Installation at 500 to 1000 m (1640 to 3281 ft.) above sea level: 5 to 34°C (41 to 93.2°F)
   - Installation at 1000 to 1500 m (3281 to 4921 ft.) above sea level: 5 to 33°C (41 to 91.4°F)
   - Installation at 1500 to 3000 m (4921 to 9843 ft.) above sea level: 5 to 30°C (41 to 86.0°F)

   The altitude specifications for the installation site include an allowable margin of error of ±100 m.

*6 "Non-operating" refers to the condition where a device has been disconnected from the power supply and stored.

*7 The actual acoustic noise level depends on the listener's location and the rack mounting conditions.

*8 The noise and acoustic power levels depend on the ambient temperature.

*9 "Non-operating" refers to the installed device in the power-off state.

*10 This is the value during operation.

*11 This value is for a single input cable.

*12 This value is for a single device.

1.3.2   PRIMEQUEST 1800E installation specifications

TABLE 1.3 PRIMEQUEST 1800E installation specifications

Item		Description
External dimensions [mm (in.)]	Width	482 (18.98)
	Depth (*1)	800 (31.50)
	Height	530 (20.87)

Item			Description
Weight [kg (lb)] (*2)			150 (330)
Air conditioning requirements	Maximum heat output [kJ/h (BTU/h)]		14,400 (13,649)
	Exhaust air flow [m³/min (ft³/min)] (*3)	FAN at low speed (Low)	14 (494)
		FAN at normal speed (Normal)	21 (742)
		FAN at high speed (High)	24 (848)
	Temperature and humidity requirements (*4)	Operating — Temperature [°C (°F)]	(*5)
		Operating — Humidity [%RH]	20 to 80
		Operating — Maximum wet-bulb temperature [°C (°F)]	29 (84.2)
		Non-operating (*6) — Temperature [°C (°F)]	0 to 50 (32 to 122)
		Non-operating (*6) — Humidity [%RH]	8 to 80
		Non-operating (*6) — Maximum wet-bulb temperature [°C (°F)]	29 (84.2)
	Noise [dB] (*7) (*8)		61
	Acoustic power level [B] (*8)		7.8
	Allowable vibration [m/s² (gal)]	Operating (including standby state)	4.0 (400) (synthetic seismic waves)
		Non-operating (*9)	10.0 (1000) (synthetic seismic waves)
	Allowable dust concentration [mg/m³]		0.15
Power requirements	Input voltage and number of phases		200 to 240 VAC ±10% Single phase
	Frequency and fluctuation range		50/60 Hz +2/-4%
	Maximum power consumption/ apparent power	Operating — Input voltage: 200 V	4.00 kW / 4.21 kVA
		Standby — Input voltage: 200 V	95 W / 126 VA
	Power factor (*10)		0.95 or more
	Rush current [A] (Inrush time) (*11)		20 or less
	Leakage current [mA] (*12)		3.5 or less

*1 The dimensions do not include protrusions.

*2 The values are for the device with all options installed.

    However, the values do not include the weight of mounted rack-mount rails (7 kg) and cables.

    You can use the following formula to calculate the weight of the device based on its configuration:

Equipment weight = 86 + (11 x A) + (8 x B) + (2 x C)

- A = Number of mounted SBs (1 to 4)
- B = Number of mounted IO Units (1 or 2)
- C = Number of mounted expansion power supply units (0 to 2)

*3 If the intake air temperature is high (but within the normal temperature range), the fan enters high-speed mode even when operation is normal.

*4 Condensation is not permitted.

*5 The temperature requirements depend on the altitude at the installation site.
- Installation at 0 to 500 m (0 to 1640 ft.) above sea level: 5 to 35°C (41 to 95.0°F)
- Installation at 500 to 1000 m (1640 to 3281 ft.) above sea level: 5 to 34°C (41 to 93.2°F)
- Installation at 1000 to 1500 m (3281 to 4921 ft.) above sea level: 5 to 33°C (41 to 91.4°F)
- Installation at 1500 to 3000 m (4921 to 9843 ft.) above sea level: 5 to 30°C (41 to 86.0°F)

  The altitude specifications for the installation site include an allowable margin of error of ±100 m.

*6 "Non-operating" refers to the condition where a device has been disconnected from the power supply and stored.

*7 The actual acoustic noise level depends on the listener's location and the rack mounting conditions.

*8 The noise and acoustic power levels depend on the ambient temperature.

*9 "Non-operating" refers to the installed device in the power-off state.

*10 This is the value during operation.

*11 This value is for a single input cable.

*12 This value is for a single device.

1.3.3　　PCI_Box installation specifications

TABLE 1.4 PCI_Box installation specifications

Item			Description
External dimensions [mm (in.)]	Width		482 (18.98)
	Depth (*1)		740 (29.13)
	Height		175 (6.89)
Weight [kg (lb)] (*2)			35 (77)
Air conditioning requirements	Maximum heat output [kJ/h (BTU/h)]		1,656 (1,570)
	Exhaust air flow [m³/min (ft³/min)] (*3)	FAN at low speed (Low)	3 (106)
		FAN at normal speed (Normal)	4 (141)
		FAN at high speed (High)	5 (177)
	Temperature and humidity requirements (*4)	Operating　Temperature [°C (°F)]	(*5)
		Humidity [%RH]	20 to 80
		Maximum wet-bulb temperature [°C (°F)]	29 (84.2)
		Non-operating (*6)　Temperature [°C (°F)]	0 to 50 (32 to 122)
		Humidity [%RH]	8 to 80
		Maximum wet-bulb temperature [°C (°F)]	29 (84.2)

Item			Description
	Noise [dB]		(Included in main unit specifications)
	Acoustic power level [B]		(Included in main unit specifications)
	Allowable vibration [m/s² (gal)]	Operating (including standby state)	4.0 (400) (synthetic seismic waves)
		Non-operating (*6)	10.0 (1000) (synthetic seismic waves)
	Allowable dust concentration [mg/m³]		0.15
Power requirements	Input voltage and number of phases		200 to 240 VAC ±10% 100 to 120 VAC ±10% 1φ
	Frequency and fluctuation range		50/60 Hz +2/-4%
	Maximum power consumption/ apparent power	Operating · Input voltage: 200 V	450 W / 475 VA
		Operating · Input voltage: 100 V	460 W / 485 VA
		Standby · Input voltage: 200 V	10 W / 40 VA
		Standby · Input voltage: 100 V	10 W / 35 VA
	Power factor (*7)		0.95 or more
	Rush current [A] (Inrush time) (*8)		25 or less
	Leakage current [mA] (*9)		3.5 or less

*1 The dimensions do not include protrusions.

*2 The values are for the device with all options installed.

　　However, the values do not include the weight of mounted rack-mount rails (7 kg) and cables.

*3 If the intake air temperature is high (but within the normal temperature range), the fan enters high-speed mode even when operation is normal.

*4 Condensation is not permitted.

*5 The temperature requirements depend on the altitude at the installation site.

- Installation at 0 to 500 m (0 to 1640 ft.) above sea level: 5 to 35°C (41 to 95.0°F)
- Installation at 500 to 1000 m (1640 to 3281 ft.) above sea level: 5 to 34°C (41 to 93.2°F)
- Installation at 1000 to 1500 m (3281 to 4921 ft.) above sea level: 5 to 33°C (41 to 91.4°F)
- Installation at 1500 to 3000 m (4921 to 9843 ft.) above sea level: 5 to 30°C (41 to 86.0°F)

　　The altitude specifications for the installation site include an allowable margin of error of ±100 m.

*6 "Non-operating" refers to the condition where a device has been disconnected from the power supply and stored.

*7 This is the value during operation.

*8 This value is for a single input cable.

*9 This value is for a single device.

1.4   Installation Area

This section shows the installation area and service areas of the PRIMEQUEST 1000 series and PCI_Box. The diagrams assume that the devices are mounted in Fujitsu 19-inch racks.

The actual installation and service areas may vary depending on the 19-inch rack with the mounted device. For details on the 19-inch racks, see APPENDIX A Racks or contact the distributor where you purchased your product, or your sales representative.
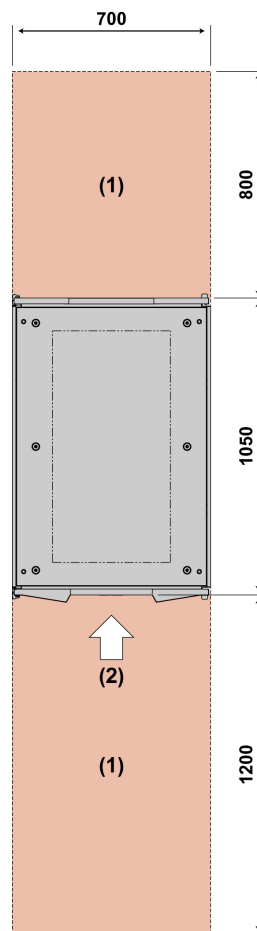
No.	Description
(1)	Service area
(2)	Front of the device

FIGURE 1.9 Service area with the 19-inch rack model 1740 (19R-174xx) installed
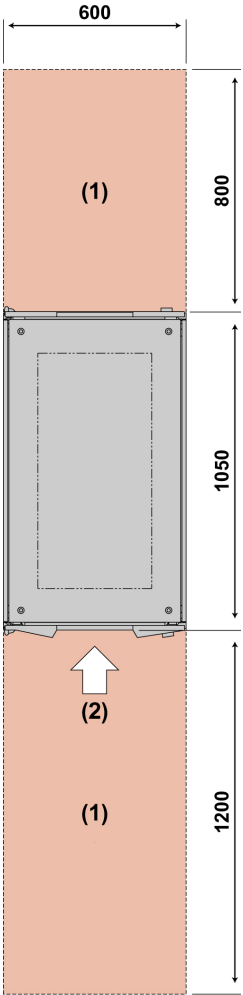
No.	Description
(1)	Service area
(2)	Front of the device

FIGURE 1.10 Service area with the 19-inch rack model 1640 (19R-164xx) installed

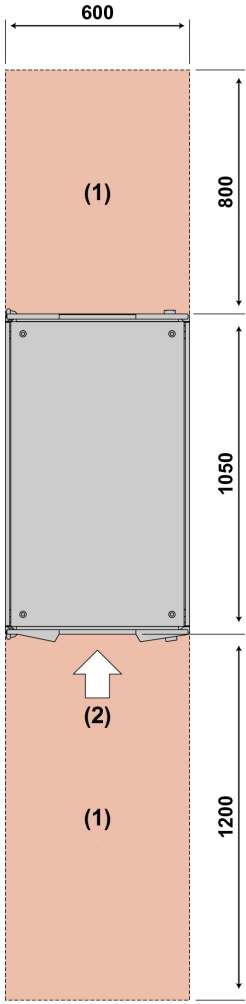| No.	Description
(1)	Service area
(2)	Front of the device

FIGURE 1.11 Service area with the 19-inch rack model 1624 (19R-162xx) installed

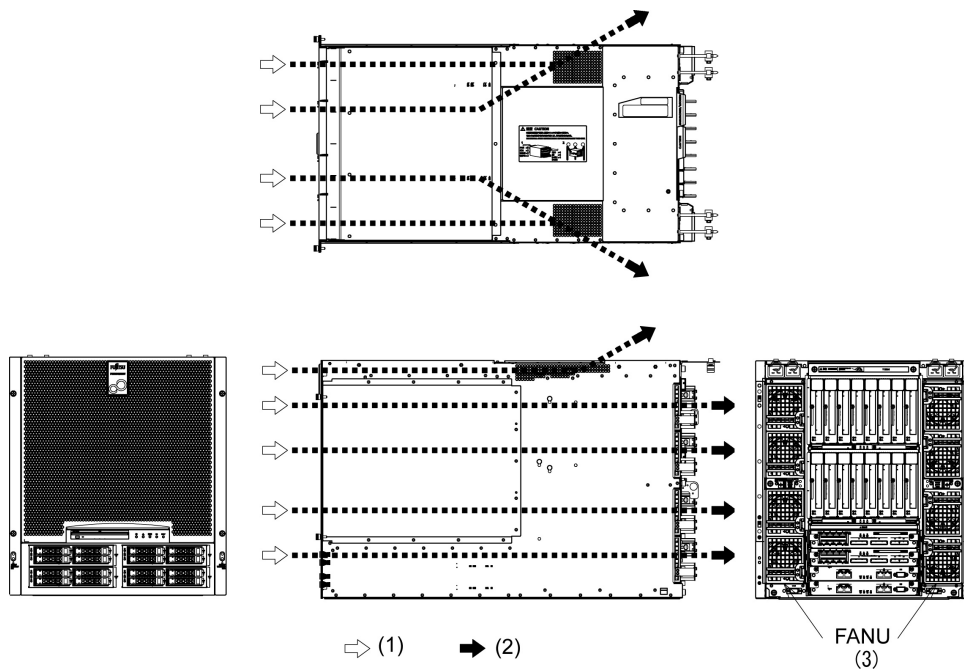## 1.5   Cooling and Exhaust Air Flows in the Devices

This section shows the cooling and exhaust air flows in each device.

- 1.5.1 Cooling and exhaust air flows in the PRIMEQUEST 1800E2/1800E
- 1.5.2 Cooling and exhaust air flows in the PCI_Box

Note

An important consideration in the planning for installation of the device is the cooling and exhaust air flows. If the device is installed without regard to these air flows, the device may take in exhaust air from another device, or vice versa. The exhaust air would likely have an effect on that device. Such an installation runs the risk of continuous output of intake air temperature alarms from this device or another device that monitors the intake air temperature.

1.5.1   Cooling and exhaust air flows in the PRIMEQUEST 1800E2/1800E

No.	Description
(1)	Air intake
(2)	Exhaust air
(3)	Exhaust vent

FIGURE 1.12 Cooling and exhaust air flows in the PRIMEQUEST 1800E2/1800E

1.5.2   Cooling and exhaust air flows in the PCI_Box
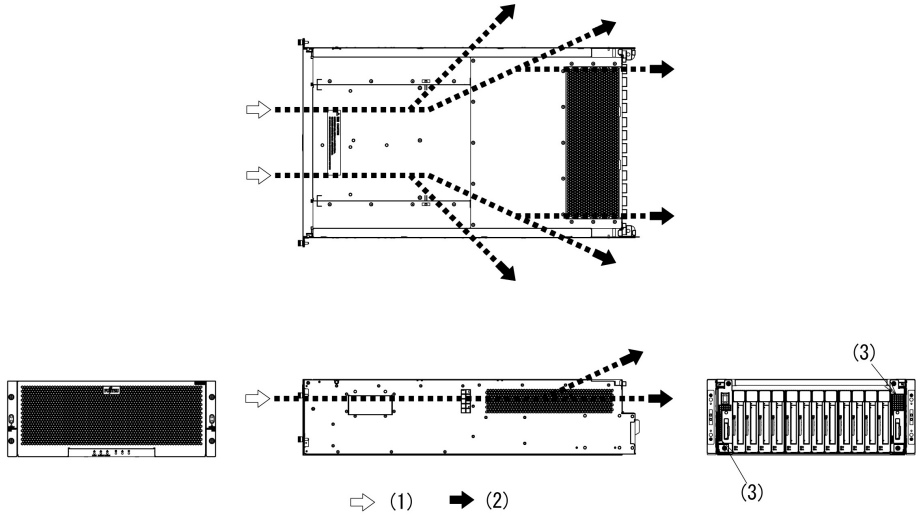
No.	Description
(1)	Air intake
(2)	Exhaust air
(3)	Exhaust vent

FIGURE 1.13 Cooling and exhaust air flows in the PCI_Box

1.6   Installation Environment

This section describes matters regarding the installation environment of equipment.

1.6.1   Dust

Airborne dust

Ensure that airborne dust does not exceed 0.15 mg/m^3 in computer rooms. Most computers are designed to withstand this level of airborne dust. This is the same as the permissible level for airborne dust in a general office and should be easily attainable in a computer room where there is little inflow of outside air containing airborne dust and cigarette smoke.

Removing dust

Airborne dust is collected by air filters in the air conditioner. The computer room must be periodically cleaned to remove dust on and under the floor. Cleaning is required in the following situations:
- When the construction of the computer room has just been completed, and it is ready to house equipment.
- When the computer room has been repaired.
- When equipment already in position in the computer room has been relocated.

1.6.2   Corrosive gases

Corrosive gases must be removed and kept out by using appropriate air cleaning facilities. Maintaining positive pressure in the computer room with filtered air will serve as a safeguard against the entry of corrosive gases from an outside source. TABLE 1.5 Tolerable limits for corrosive gases lists the tolerable limits for different kinds of corrosive gases.

TABLE 1.5 Tolerable limits for corrosive gases

Gas name	Tolerable limit
Hydrogen sulfide (H_2S)	7.1 ppb and under
Sulfur dioxide (sulfur oxide) (SO_2)	37 ppb and under
Hydrogen chloride (HCl)	6.6 ppb and under
Chlorine (Cl_2)	3.4 ppb and under
Hydrogen fluoride (HF)	3.6 ppb and under
Nitrogen dioxide (nitrogen oxide) (NO_2)	52 ppb and under
Ammonia (NH_3)	420 ppb and under
Ozone (O_3)	5 ppb and under
Oil vapor	0.2 mg/m^3 and under

1.6.3　　Seawater (salt damage)

The air in the vicinity of coastal areas contains large amounts of airborne sea salt particles. If these particles remain inside computers, substances are formed by a condensation reaction of chemicals. These substances and the humidity lead to insulation failure and the corrosion and deterioration of components and materials. Therefore, computers should be installed in locations at a distance from coastal areas.

The following outlines installation criteria for preventing salt water damage due to airborne sea salt particles.

Criteria: The installation site shall not be within 0.5 km of the ocean or coastal areas (unless the computer room uses air conditioners to filter out airborne sea salt particles from outside air).

1.7   Security Actions

For details on security actions, see "CHAPTER 8 Security Actions" in the *SPARC Enterprise/PRIMEQUEST Common Installation Planning Manual* (C120-H007EN).

CHAPTER 2   Connection Information

This chapter describes the cables used with the PRIMEQUEST 1000
series and provides an overview of cable connections.

2.1 Overview of Connections

This section describes an overview of connections for the PRIMEQUEST 1000 series.

2.1.1 Overview of Connections (PRIMEQUEST 1800E2)

FIGURE 2.1 Overview of device connections (PRIMEQUEST 1800E2) shows an overview of device connections for the PRIMEQUEST 1800E2.

FIGURE 2.1 Overview of device connections (PRIMEQUEST 1800E2)

TABLE 2.1 Notes on device connections (PRIMEQUEST 1800E2)

Number in Figure 2.1	Component		Description	
*1	System board		PRIMEQUEST 1800E2	Up to 4 units can be mounted.
*2	IO unit	IO board	PRIMEQUEST 1800E2	Up to 2 units can be mounted.

Number in Figure 2.1	Component		Description	
*3		GSPB	PRIMEQUEST 1800E2	Up to 2 units can be mounted.
*4	MMB		PRIMEQUEST 1800E2	Up to 2 units can be mounted.
*5	PCI_Box		PRIMEQUEST 1800E2	Up to 2 units can be connected.

2.1.2 Overview of Connections (PRIMEQUEST 1800E)

FIGURE 2.2 Overview of device connections (PRIMEQUEST 1800E) shows an overview of device connections for the PRIMEQUEST 1800E.
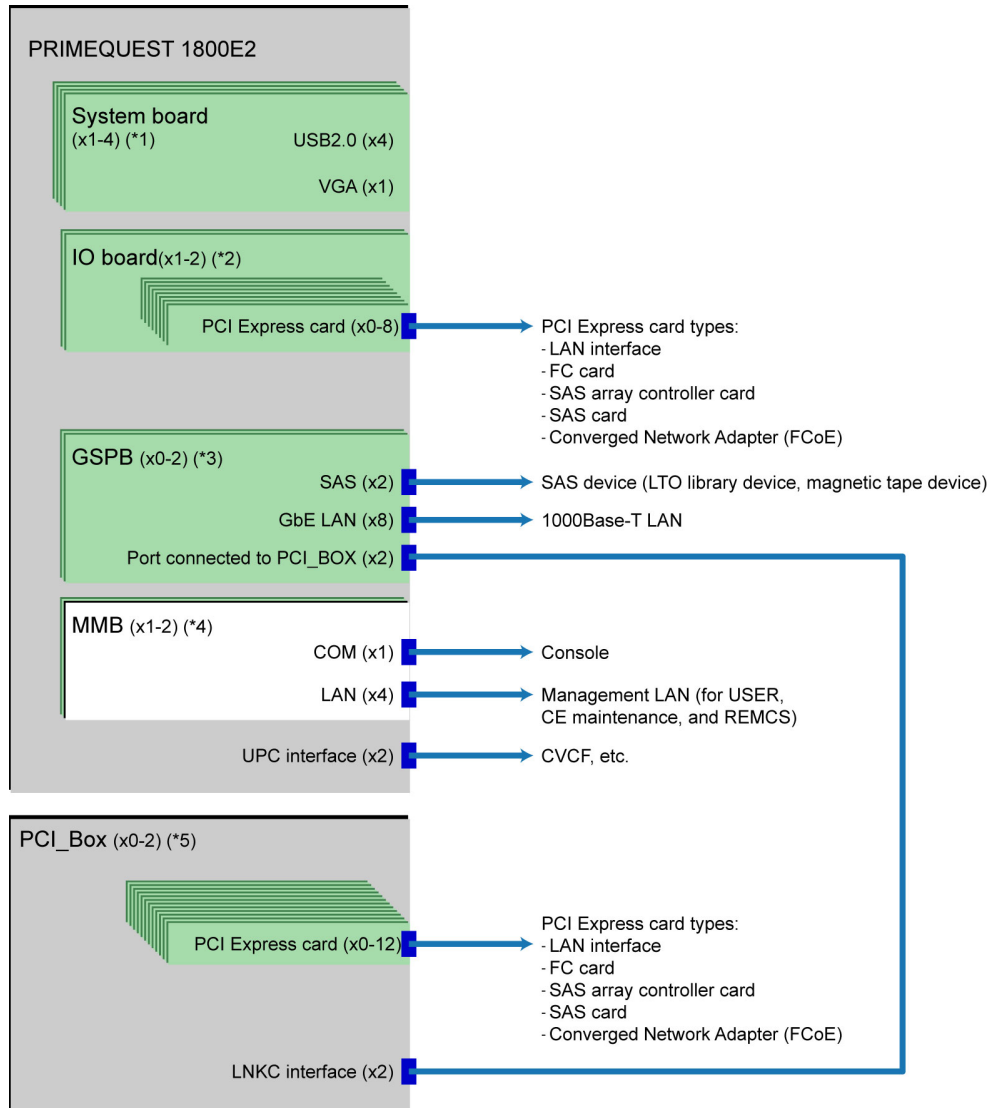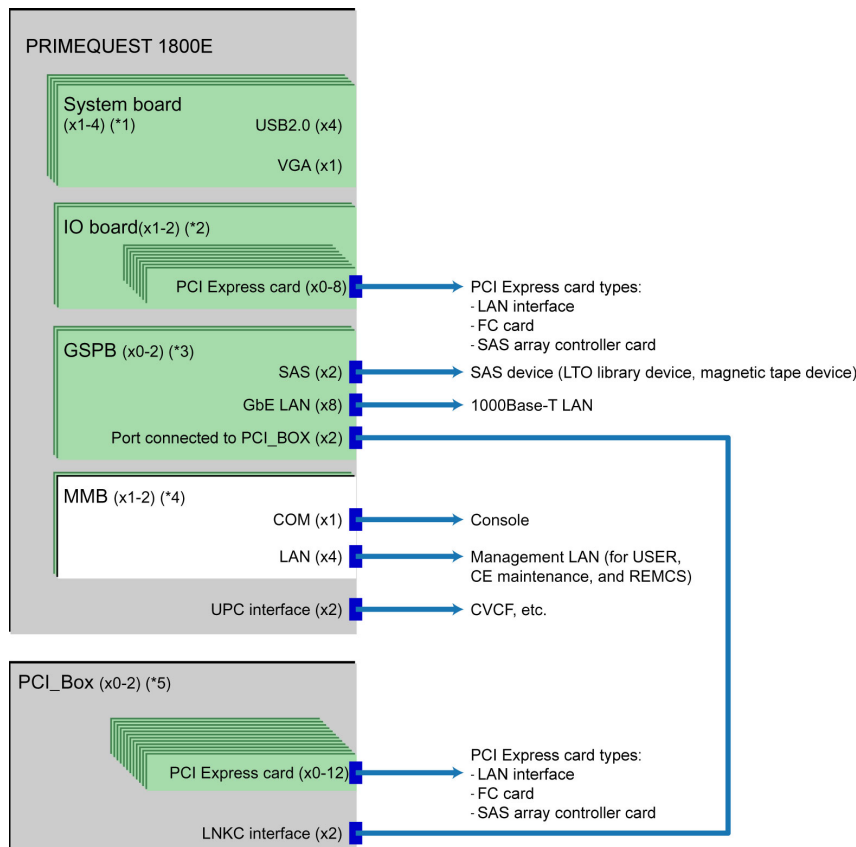

FIGURE 2.2 Overview of device connections (PRIMEQUEST 1800E)

TABLE 2.2 Notes on device connections (PRIMEQUEST 1800E)

Number in Figure 2.2	Component		Description	
*1	System board		PRIMEQUEST 1800E	Up to 4 units can be mounted.
*2	IO unit	IO board	PRIMEQUEST 1800E	Up to 2 units can be mounted.
*3		GSPB	PRIMEQUEST 1800E	Up to 2 units can be mounted.
*4	MMB		PRIMEQUEST 1800E	Up to 2 units can be mounted.
*5	PCI_Box		PRIMEQUEST 1800E	Up to 2 units can be connected.

2.2 Signal Cable Connections

This section provides a cable connection diagram and a list of signal cables. The section also describes dos and don'ts on cable preparation.

2.2.1 Basic interfaces and peripheral devices (PRIMEQUEST 1800E2)

FIGURE 2.3 Interface cable connections (for the basic interfaces and peripheral devices) (PRIMEQUEST 1800E2) shows a diagram of cable connections for the basic interfaces and peripheral devices of the PRIMEQUEST 1800E2. TABLE 2.3 Cables (for the basic interfaces and peripheral devices) (PRIMEQUEST 1800E2) lists the cables.
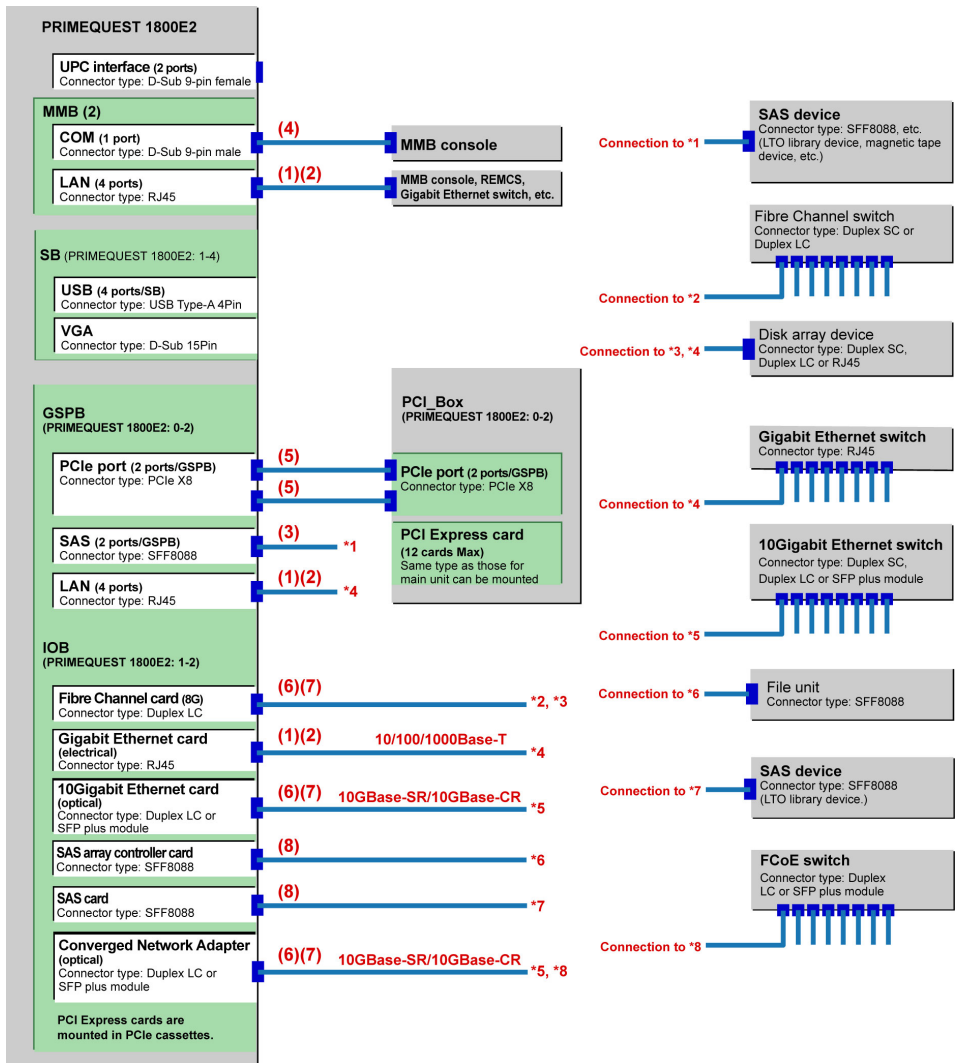
Cable connection diagram (PRIMEQUEST 1800E2)

FIGURE 2.3 Interface cable connections (for the basic interfaces and peripheral devices) (PRIMEQUEST 1800E2)

Remarks

- The numbers in parentheses ( ) correspond to the cable numbers in TABLE 2.3 Cables (for the basic interfaces and peripheral devices) (PRIMEQUEST 1800E2) .
- For a 10GBase-CR cable, use the 10GBase-CR (TWINAX) cable specified for the connected switch product.

List of cables

Determine the length of an external interface cable by considering the extra length required for laying the cable inside the cabinet.

TABLE 2.3 Cables (for the basic interfaces and peripheral devices) (PRIMEQUEST 1800E2)

No.	Name	Model name	Commercially available types	Length
(1)	Twisted-pair cable (Category 5 UTP cable)	TPCBL-B005	Sold separately: Select from lengths of 5, 10, 15, 30, 50, and 100 m. 100Base-TX and 10Base-T connections use this cable (Category 5). RJ45 8Pin - RJ45 8Pin	5 m
		TPCBL-B010		10 m
		TPCBL-B015		15 m
		TPCBL-B030		30 m
		TPCBL-B050		50 m
		TPCBL-B100		100 m
(2)	Enhanced Category 5 UTP cable	TPCBL-C005	Sold separately: Select from lengths of 5, 10, 15, 30, 50, and 100 m. 1000Base-T, 100Base-TX, and 10Base-T connections use this cable (Category 5e). RJ45 8Pin - RJ45 8Pin	5 m
		TPCBL-C010		10 m
		TPCBL-C015		15 m
		TPCBL-C030		30 m
		TPCBL-C050		50 m
		TPCBL-C100		100 m
(3)	SAS cable	CBL-SASM1U	Sold separately: Select from lengths of 1.5 and 3 m. miniSAS (SFF-8088) - miniSAS (SFF-8088) For use in countries other than Japan	1.5 m
		CBL-SASM3U		3 m
(4)	RS232C cable (D-Sub 9Pin-9Pin, crossover cable)	FMV-CBL501		1.5 m
(5)	PCI Express cable	Included with PCI_Box		2 m
(6)	Multimode Fibre Channel cable	CBL-MLLB02	Sold separately: Select from lengths of 2, 5, and 15 m. Dual LC connector - Dual LC connector Without cable insulation	2 m
		CBL-MLLB05		5 m
		CBL-MLLB15		15 m
		CBL-MLLC05	Sold separately: Select from lengths of 5, 10, 20, 30, 40, and 50 m. Dual LC connector - Dual LC connector With cable insulation	5 m
		CBL-MLLC10		10 m
		CBL-MLLC20		20 m
		CBL-MLLC30		30 m

No.	Name	Model name	Commercially available types	Length
		CBL-MLLC40		40 m
		CBL-MLLC50		50 m
		CBL-MLLD1A	Sold separately: 100 m (with cable insulation) Dual LC connector - Dual LC connector	100 m
(7)	Multimode Fibre Channel cable	CBL-MLSB02	Sold separately: Select from lengths of 2, 5, and 15 m. Dual LC connector - Dual SC connector Without cable insulation	2 m
		CBL-MLSB05		5 m
		CBL-MLSB15		15 m
		CBL-MLSC05	Sold separately: Select from lengths of 5, 10, 20, 30, 40, and 50 m. Dual LC connector - Dual SC connector With cable insulation	5 m
		CBL-MLSC10		10 m
		CBL-MLSC20		20 m
		CBL-MLSC30		30 m
		CBL-MLSC40		40 m
		CBL-MLSC50		50 m
		CBL-MLSA1A	Sold separately: 100 m (with cable insulation) Dual LC connector - Dual SC connector	100 m
(8)	SAS cable	PG-CBLA014/ PG-CBLA015/ PG-CBLA016	Sold separately: Select from lengths of 2, 4, and 6 m. miniSAS (SFF-8088) - miniSAS (SFF-8088)	2 m
				4 m
				6 m

For a 10GBase-CR cable, use the 10GBase-CR (TWINAX) cable specified for the connected switch product.

2.2.2   Basic interfaces and peripheral devices (PRIMEQUEST 1800E)

FIGURE 2.4 Interface cable connections (for the basic interfaces and peripheral devices) (PRIMEQUEST 1800E) shows a diagram of cable connections for the basic interfaces and peripheral devices of the PRIMEQUEST 1800E.TABLE 2.4 Cables (for the basic interfaces and peripheral devices) (PRIMEQUEST 1800E) lists the cables.
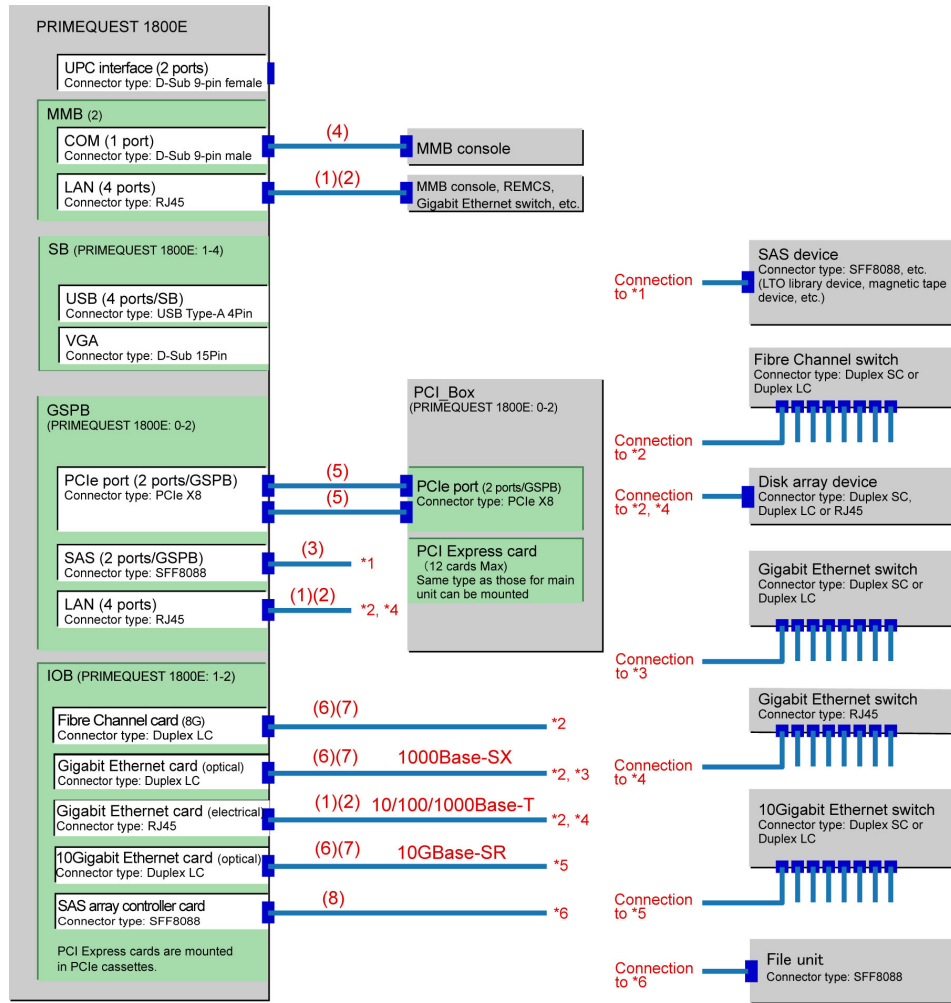
Cable connection diagram

FIGURE 2.4 Interface cable connections (for the basic interfaces and peripheral devices) (PRIMEQUEST 1800E)

Remarks

The numbers in parentheses ( ) correspond to the cable numbers in TABLE 2.4 Cables (for the basic interfaces and peripheral devices) (PRIMEQUEST 1800E).

List of cables

Determine the length of an external interface cable by considering the extra length required for laying the cable inside the cabinet.

TABLE 2.4 Cables (for the basic interfaces and peripheral devices) (PRIMEQUEST 1800E)

No.	Name	Model name	Commercially available types	Length
(1)	Twisted-pair cable (Category 5 UTP cable)	TPCBL-B005	Sold separately: Select from lengths of 5, 10, 15, 30, 50, and 100 m. 100Base-TX and 10Base-T connections use this cable (Category 5). RJ45 8Pin - RJ45 8Pin	5 m
		TPCBL-B010		10 m
		TPCBL-B015		15 m
		TPCBL-B030		30 m
		TPCBL-B050		50 m

No.	Name	Model name	Commercially available types	Length
		TPCBL-B100		100 m
(2)	Enhanced Category 5 UTP cable	TPCBL-C005	Sold separately: Select from lengths of 5, 10, 15, 30, 50, and 100 m. 1000Base-T, 100Base-TX, and 10Base-T connections use this cable (Category 5e). RJ45 8Pin - RJ45 8Pin	5 m
		TPCBL-C010		10 m
		TPCBL-C015		15 m
		TPCBL-C030		30 m
		TPCBL-C050		50 m
		TPCBL-C100		100 m
(3)	SAS cable	CBL-SASM1U	Sold separately: Select from lengths of 1.5 and 3 m. miniSAS (SFF-8088) - miniSAS (SFF-8088) For use in countries other than Japan	1.5 m
		CBL-SASM3U		3 m
(4)	RS232C cable (D-Sub 9Pin-9Pin, crossover cable)	FMV-CBL501		1.5 m
(5)	PCI Express cable	Included with PCI_Box		2 m
(6)	Multimode Fibre Channel cable	CBL-MLLB02	Sold separately: Select from lengths of 2, 5, and 15 m. Dual LC connector - Dual LC connector Without cable insulation	2 m
		CBL-MLLB05		5 m
		CBL-MLLB15		15 m
		CBL-MLLC05	Sold separately: Select from lengths of 5, 10, 20, 30, 40, and 50 m. Dual LC connector - Dual LC connector With cable insulation	5 m
		CBL-MLLC10		10 m
		CBL-MLLC20		20 m
		CBL-MLLC30		30 m
		CBL-MLLC40		40 m
		CBL-MLLC50		50 m
		CBL-MLLD1A	Sold separately: 100 m (with cable insulation) Dual LC connector - Dual LC connector	100 m
(7)	Multimode Fibre Channel cable	CBL-MLSB02	Sold separately: Select from lengths of 2, 5, and 15 m. Dual LC connector - Dual SC connector Without cable insulation	2 m
		CBL-MLSB05		5 m
		CBL-MLSB15		15 m
		CBL-MLSC05	Sold separately: Select from lengths of 5, 10, 20, 30, 40, and 50 m. Dual LC connector - Dual SC connector With cable insulation	5 m
		CBL-MLSC10		10 m
		CBL-MLSC20		20 m
		CBL-MLSC30		30 m

No.	Name	Model name	Commercially available types	Length
		CBL-MLSC40		40 m
		CBL-MLSC50		50 m
		CBL-MLSA1A	Sold separately: 100 m (with cable insulation) Dual LC connector - Dual SC connector	100 m
(8)	SAS cable	PG-CBLA014/ PG-CBLA015/ PG-CBLA016	Sold separately: Select from lengths of 2, 4, and 6 m. miniSAS (SFF-8088) - miniSAS (SFF-8088)	2 m
				4 m
				6 m

2.2.3   External interface connectors in detail

This section shows the mounting locations of the external interface connectors for the PRIMEQUEST 1000 series. Consider the mounting location when calculating the extra length of a cable.

External interface connectors in the PRIMEQUEST 1800E2/1800E main unit

MMB external interfaces in detail

IOB external interfaces in detail

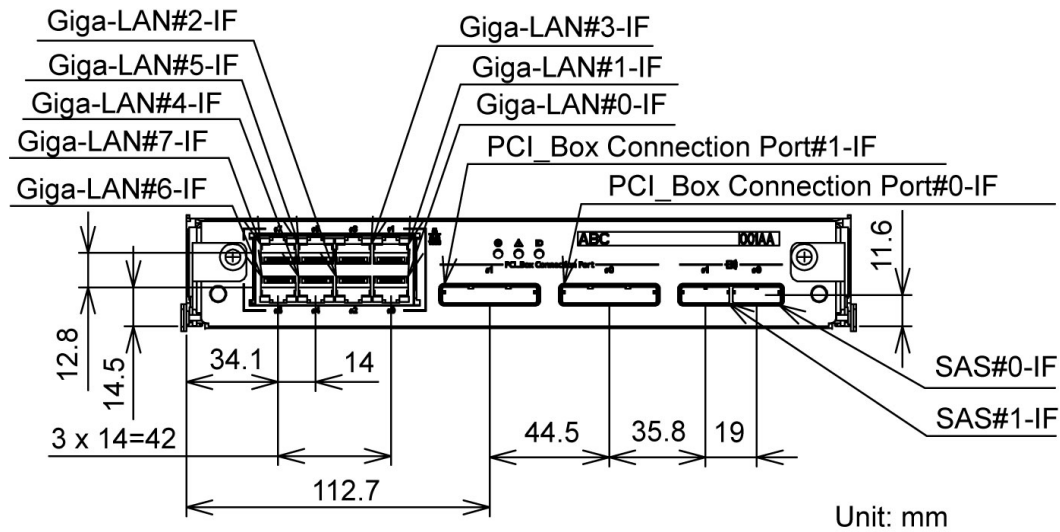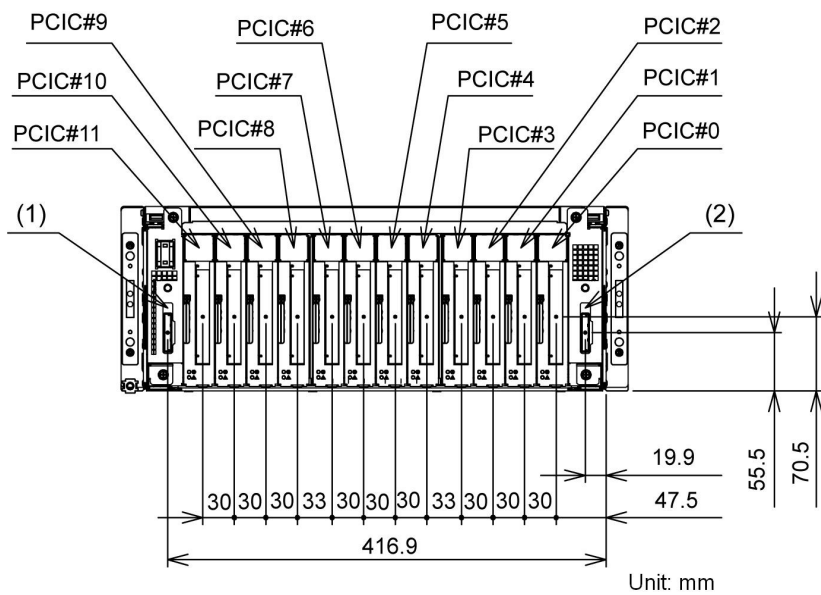GSPB external interfaces in detail

PCI_Box external interfaces in detail

External interface connectors in the PRIMEQUEST 1800E2/1800E main unit
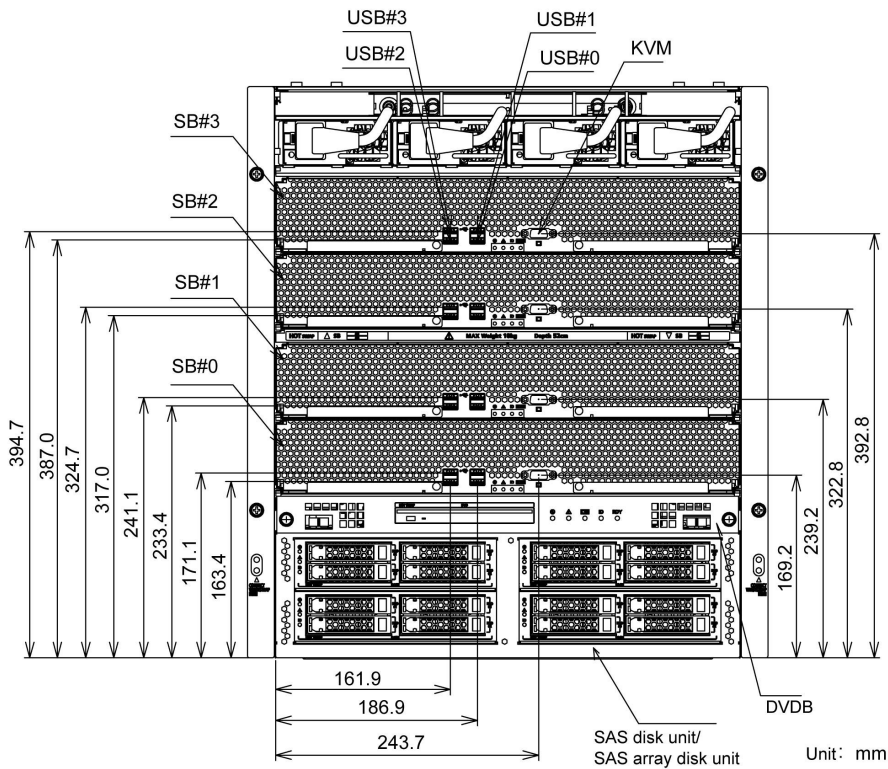
FIGURE 2.5 External interface connectors in the PRIMEQUEST 1800E2/1800E main unit (front view)

Unit: mm
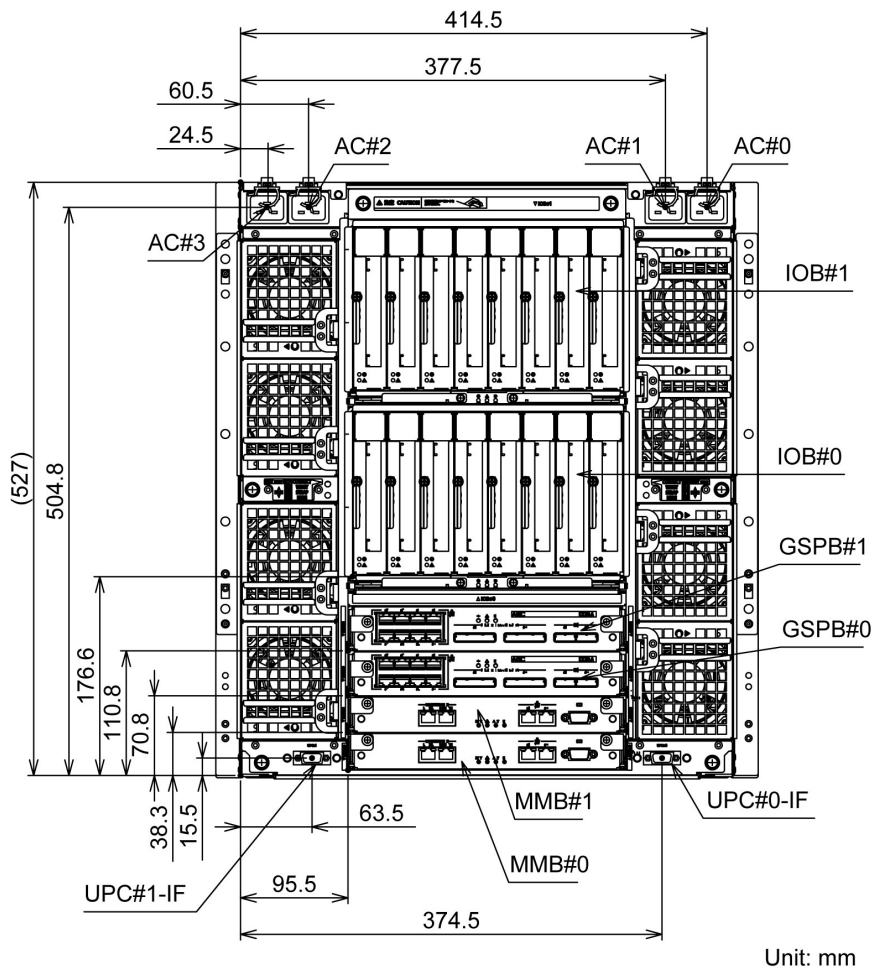
FIGURE 2.6 External interface connectors in the PRIMEQUEST 1800E2/1800E main unit (rear view)

MMB external interfaces in detail

Unit: mm
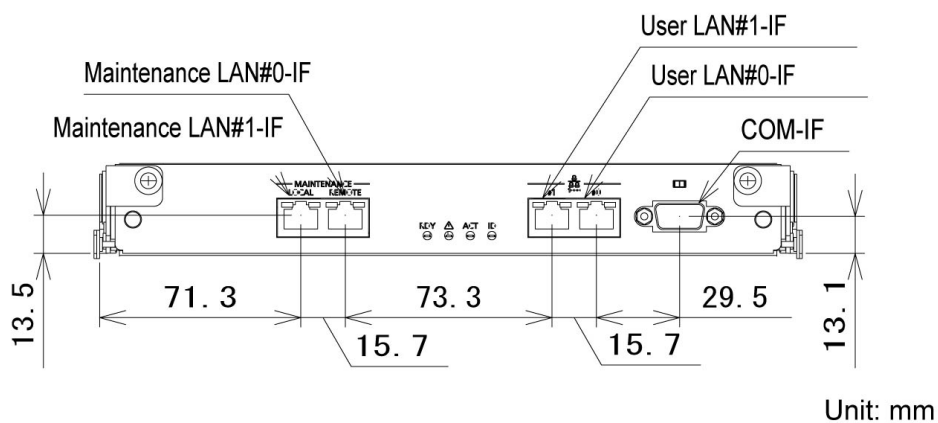
FIGURE 2.7 MMB external interfaces in detail

IOB external interfaces in detail

Unit: mm
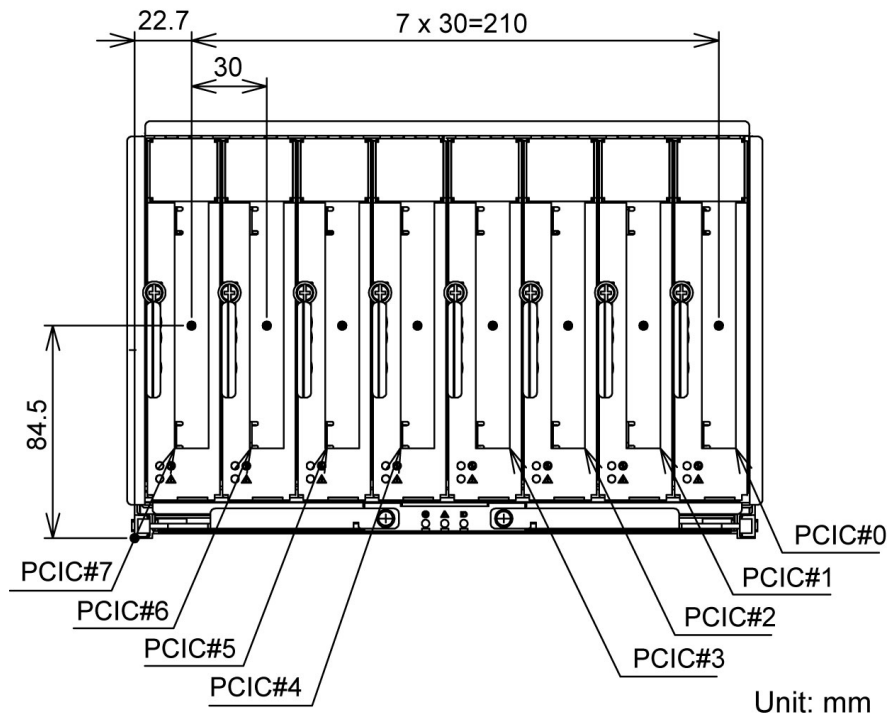
FIGURE 2.8 IOB external interfaces in detail

GSPB external interfaces in detail

Unit: mm

FIGURE 2.9 GSPB external interfaces in detail

PCI_Box external interfaces in detail

No.	Description
(1)	PCI Express interface #1
(2)	PCI Express interface #0

FIGURE 2.10 PCI_Box external interfaces in detail

2.3　　Power Cable Connections

This section shows diagrams of the input power distribution for the PRIMEQUEST 1000 series main unit and the PCI_Box.

2.3.1　　Power cable connections of the PRIMEQUEST 1800E2/1800E

This section shows diagrams of the input power distribution for the PRIMEQUEST 1800E2/1800E.

Standard configuration (primary power feed, no redundant power supply)

Redundant power supply configuration (primary power feed, redundant power supply)

Dual power feed configuration

Standard configuration (primary power feed, no redundant power supply)
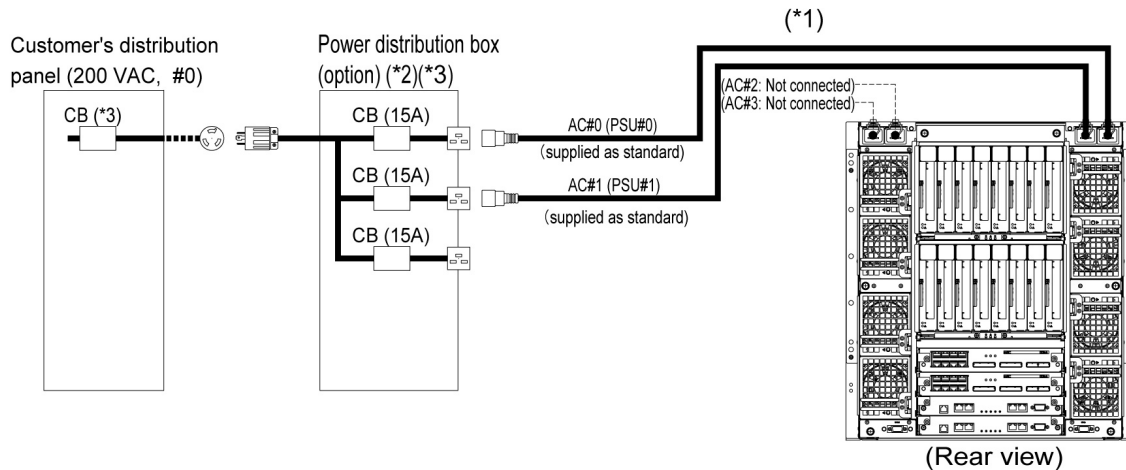
FIGURE 2.11 Standard configuration (primary power feed, no redundant power supply)

*1 Power cables (AC#0 to AC#1) are connected to PSUs (PSU#0 to PSU#1) on a one-to-one basis.

*2 The power distribution box must be prepared separately.

*3 To use a power distribution box, it must meet the breaker characteristics for the customer's distribution panel. (See 2.6 Shutoff Characteristic of the Customer's Distribution Panel (Only When Connected to the Power Distribution Box).)

Redundant power supply configuration (primary power feed, redundant power supply)
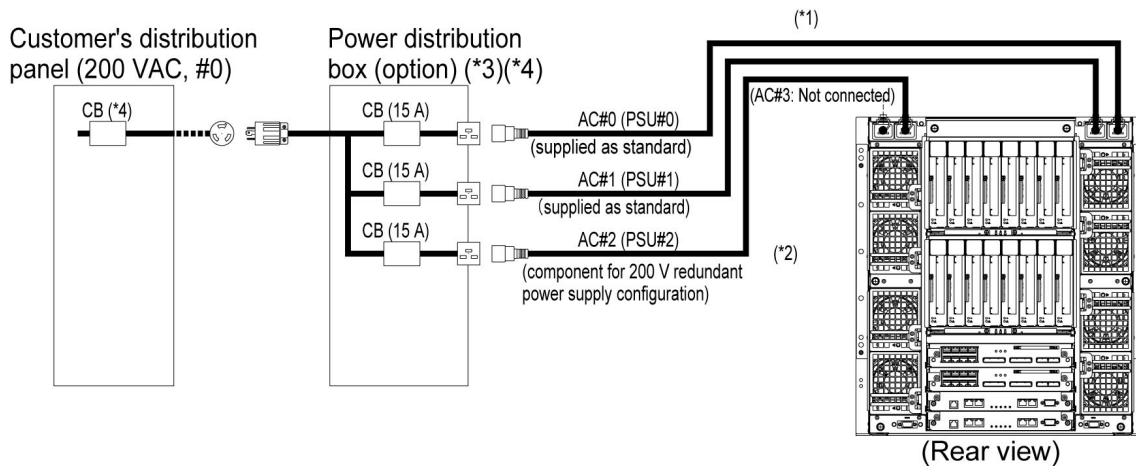
FIGURE 2.12 Redundant power supply configuration (primary power feed, redundant power supply)

*1 Power cables (AC#0 to AC#2) are connected to PSUs (PSU#0 to PSU#2) on a one-to-one basis.

*2 This change to the power supply configuration requires a redundant power supply (200 V), which must be prepared separately.

*3 The power distribution box must be prepared separately.

*4 To use a power distribution box, it must meet the breaker characteristics for the customer's distribution panel. (See 2.6 Shutoff Characteristic of the Customer's Distribution Panel (Only When Connected to the Power Distribution Box).)

Dual power feed configuration
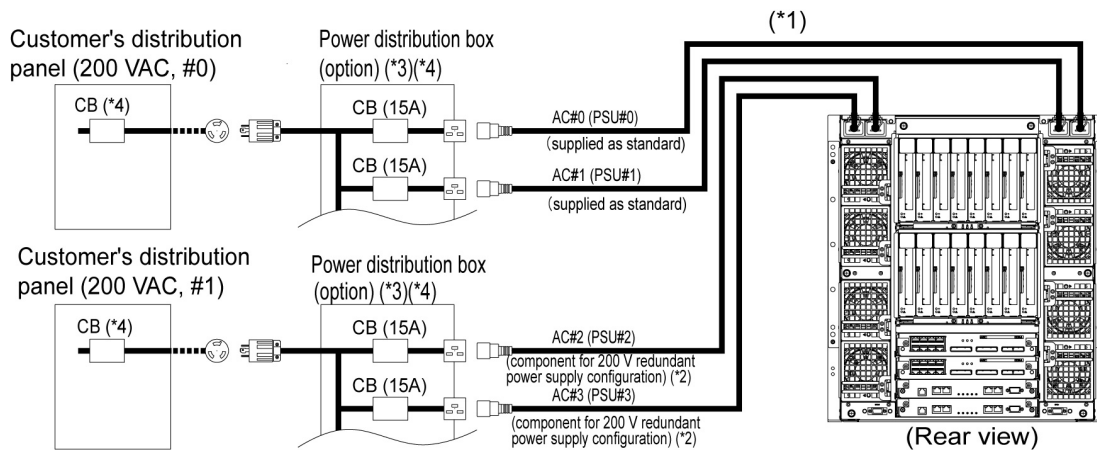
FIGURE 2.13 Dual power feed configuration

*1 Power cables (AC#0 to AC#3) are connected to PSUs (PSU#0 to PSU#3) on a one-to-one basis.

*2 This change to the power supply configuration requires a dual power supply (200 V), which must be prepared separately.

*3 The power distribution box must be prepared separately.

*4 To use a power distribution box, it must meet the breaker characteristics for the customer's distribution panel. (See 2.6 Shutoff Characteristic of the Customer's Distribution Panel (Only When Connected to the Power Distribution Box).)

2.3.2 Power cable connections of the PCI_Box

This section shows diagrams of the input power distribution for the PCI_Box.

Remarks

Use the same power configuration for the PCI_Box as that for the main unit, which is either a redundant configuration or dual power feed configuration.

200 to 240 V standard configuration (primary power feed, no redundant power supply)
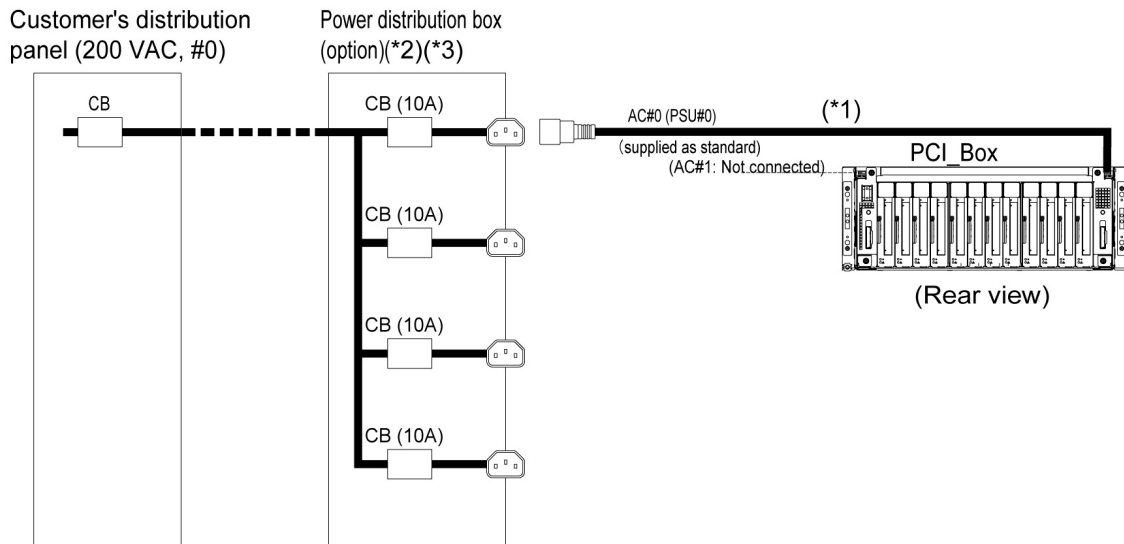200 to 240 V redundant power supply configuration (primary power feed, redundant power supply)
200 to 240 V dual power feed configuration
100 to 120 V configuration (primary power feed, no redundant power supply)
100 to 120 V redundant power supply configuration (primary power feed, redundant power supply)

200 to 240 V standard configuration (primary power feed, no redundant power supply)

FIGURE 2.14 200 to 240 V standard configuration (primary power feed, no redundant power supply)

*1 The power cable (AC#0) is connected to the PSU (PSU#0) on a one-to-one basis.

*2 The power distribution box must be prepared separately.

*3 To use a power distribution box, it must meet the breaker characteristics for the customer's distribution panel. (See 2.6 Shutoff Characteristic of the Customer's Distribution Panel (Only When Connected to the Power Distribution Box).)

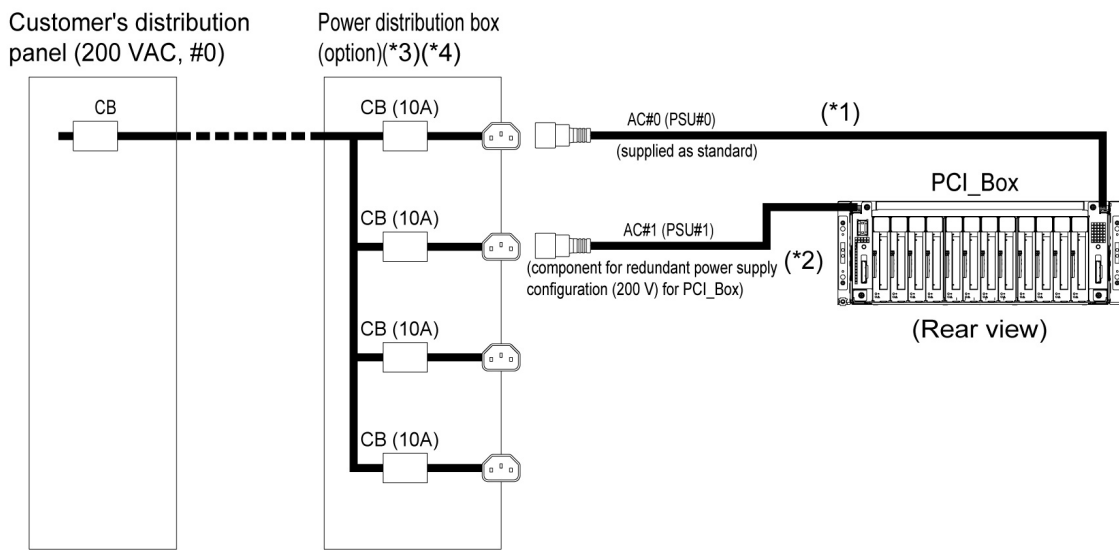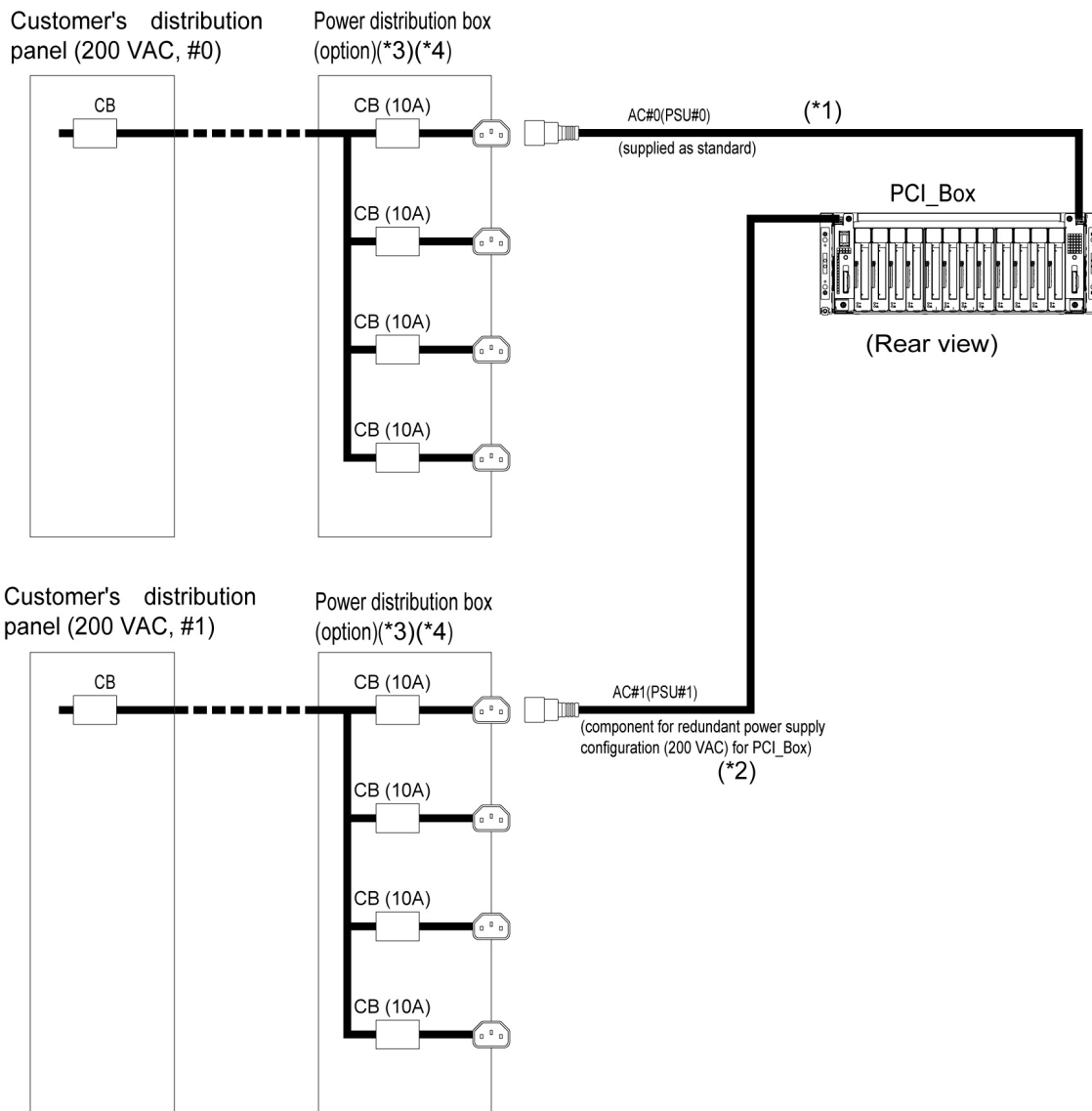### 200 to 240 V redundant power supply configuration (primary power feed, redundant power supply)

FIGURE 2.15 200 to 240 V redundant power supply configuration (primary power feed, redundant power supply)

*1 Power cables (AC#0 to AC#1) are connected to PSUs (PSU#0 to PSU#1) on a one-to-one basis.

*2 This change to the power supply configuration requires a redundant power supply (200 V) for the PCI_Box, and the power supply must be prepared separately.

*3 The power distribution box must be prepared separately.

*4 To use a power distribution box, it must meet the breaker characteristics for the customer's distribution panel. (See 2.6 Shutoff Characteristic of the Customer's Distribution Panel (Only When Connected to the Power Distribution Box).)

200 to 240 V dual power feed configuration

FIGURE 2.16 200 to 240 V dual power feed configuration

*1 Power cables (AC#0 to AC#1) are connected to PSUs (PSU#0 to PSU#1) on a one-to-one basis.

*2 This change to the power supply configuration requires a redundant power supply (200 V) for the PCI_Box, and the power supply must be prepared separately.

*3 The power distribution box must be prepared separately.

*4 To use a power distribution box, it must meet the breaker characteristics for the customer's distribution panel. (See 2.6 Shutoff Characteristic of the Customer's Distribution Panel (Only When Connected to the Power Distribution Box).)

100 to 120 V configuration (primary power feed, no redundant power supply)
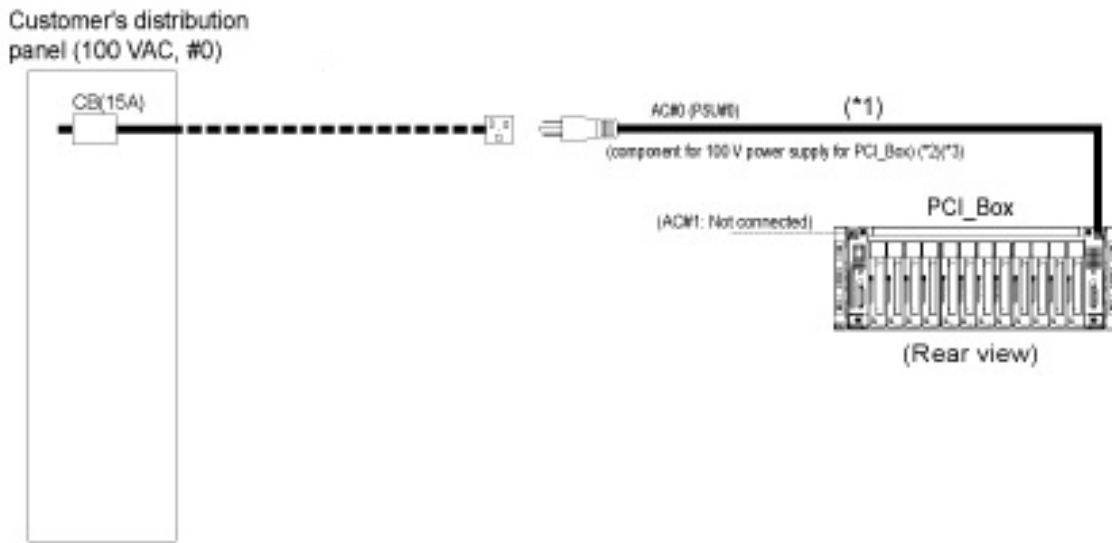
FIGURE 2.17 100 to 120 V configuration (primary power feed, no redundant power supply)

*1 The power cable (AC#0) is connected to the PSU (PSU#0) on a one-to-one basis.

*2 This change to the power supply configuration requires a 100 V power supply for the PCI_Box, and the power supply must be prepared separately.

*3 Use the power cable supplied with the 100 V power supply for the PCI_Box instead of the standard power cable supplied with the device.

100 to 120 V redundant power supply configuration (primary power feed, redundant power supply)
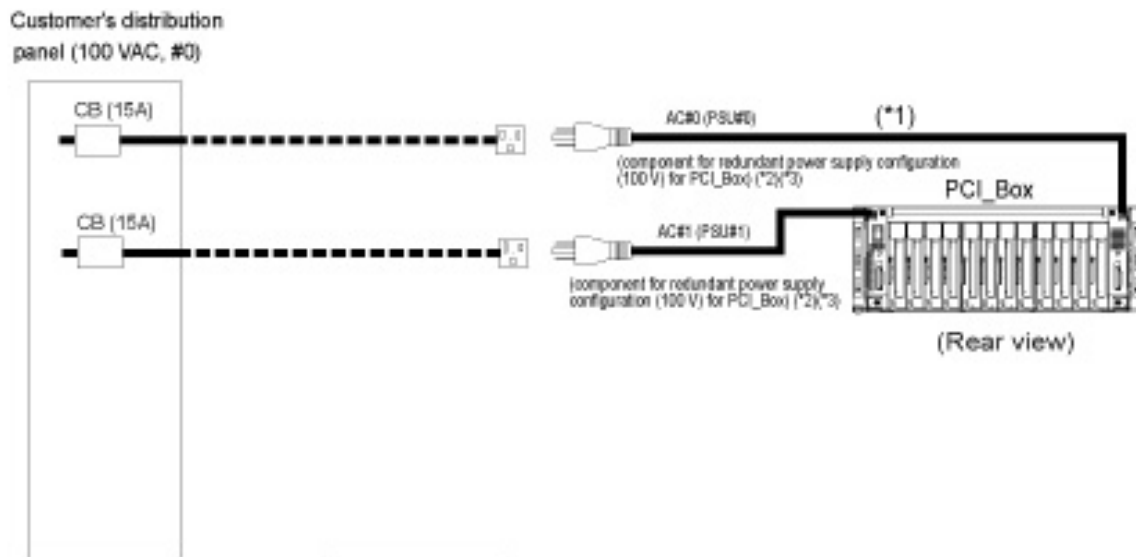
FIGURE 2.18 100 to 120 V redundant power supply configuration (primary power feed, redundant power supply)

*1 Power cables (AC#0 to AC#1) are connected to PSUs (PSU#0 to PSU#1) on a one-to-one basis.

*2 This change to the power supply configuration requires a redundant power supply (100 V) for the PCI_Box, and the power supply must be prepared separately.

*3 Use the power cable supplied with the redundant power supply (100 V) for the PCI_Box instead of the standard power cable supplied with the device.

2.4　　Input Power Connection Specifications

This section lists the specifications of input power connections.

- 2.4.1 PRIMEQUEST 1000 series main unit
- 2.4.2 PCI_Box
- 2.4.3 Connections between the power distribution box and distribution panel

2.4.1　　PRIMEQUEST 1000 series main unit

TABLE 2.5 Power cable specifications of the PRIMEQUEST 1000 series main unit lists the input power connections specifications of the PRIMEQUEST 1000 series main unit.

TABLE 2.5 Power cable specifications of the PRIMEQUEST 1000 series main unit

Plug type	Remarks	
IEC320-C20 type	Shape of receptacle outlet	IEC320-C19 type

Remarks

- Connect the device with the power cable supplied with the device or the power cable supplied with the optional component. Do not use the power cable supplied with the device to connect a different product.
- Use a plug that matches the shape of the receptacle outlet.

2.4.2　　PCI_Box

TABLE 2.6 Power cable specifications of the PCI_Box lists the input power connections specifications of the PCI_Box.

TABLE 2.6 Power cable specifications of the PCI_Box

Plug type	Remarks	
IEC320-C14 type	Shape of receptacle outlet	IEC320-C13 type

Remarks

- Connect the device with the power cable supplied with the device or the power cable supplied with the optional component. Do not use the power cable supplied with the device to connect a different product.
- Use a plug that matches the shape of the receptacle outlet.

2.4.3 Connections between the power distribution box and distribution panel

TABLE 2.7 Specifications of the power cable between the power distribution box and distribution panel lists the specifications of power cables between the power distribution box and distribution panel.

TABLE 2.7 Specifications of the power cable between the power distribution box and distribution panel

Destination	Plug type	Remarks	
For use in countries other than Japan	NEMA L6-30P	Shape of receptacle outlet	NEMA L6-30R (North America only) 30A-220VAC
For use in Brazil	IEC60309-32A	Shape of receptacle outlet	IEC60309 32A-250VAC

Remarks
- Connect the device with only the power cable supplied with the device. Do not use the power cable supplied with the device to connect a different product.
- Use a plug that matches the shape of the receptacle outlet.

2.5 Power Cable Connections under a Raised Floor (Except in Europe)

For a power distribution box (or the main unit or the PCI_Box) whose power cable is connected under a raised floor, the recommended underfloor height is at least 300 mm (11.8 in.), depending on the connector shape and the radius of the cable loop. (See (1) in FIGURE 2.19 Power cable connections under a raised floor (except in Europe).)

If the underfloor height is less than 300 mm (11.8 in.), install the receptacle outlet sideways. (See (2) in FIGURE 2.19 Power cable connections under a raised floor (except in Europe).)

In either case, prepare a receptacle outlet close to the device.

(1) When the underfloor height is 300 mm (11.8 in.) or more

(2) When the underfloor height is less than 300 mm (11.8 in.)
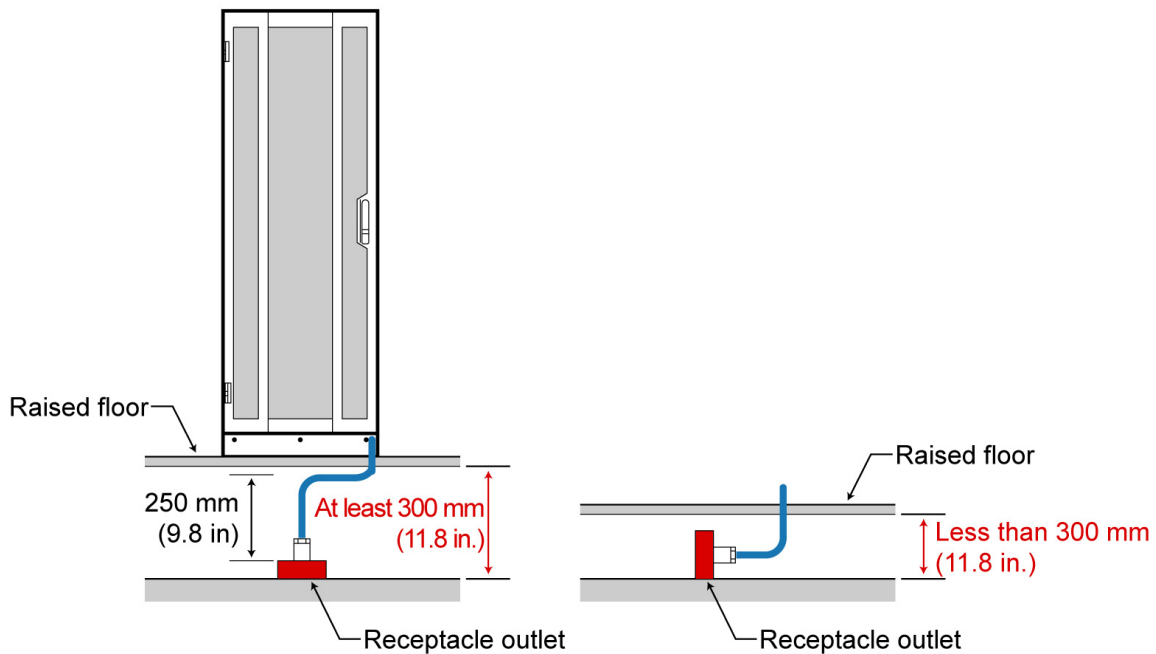
FIGURE 2.19 Power cable connections under a raised floor (except in Europe)

Remarks
- The above figure shows an example with the device mounted in a Fujitsu 19-inch rack.
- The values in parentheses ( ) are in inches.

2.6 Shutoff Characteristic of the Customer's Distribution Panel (Only When Connected to the Power Distribution Box)

To protect the device when it is connected to the customer's distribution panel through a power distribution box, the breaker of the device (or the power distribution box) must trip before the corresponding breaker in the customer's distribution panel. For this reason, the breakers in the customer's distribution panel must meet the characteristics listed in TABLE 2.8 Breaker characteristics for the customer's distribution panel. Use only breakers that meet these characteristics.

TABLE 2.8 Breaker characteristics for the customer's distribution panel

Power input	Device name	Breaker for use in countries other than European countries (*)	Breaker for use in Europe (*)
200 to 240 VAC	Power distribution box	30 A	32 A

* Capacity of a breaker in the customer's distribution panel

Use a long-time-delay type of breaker whose characteristics correspond to phase D shown in FIGURE 2.20 Distribution panel breaker characteristics (IEC898 or DIN0641 Part II). Alternatively, use a slower breaker.
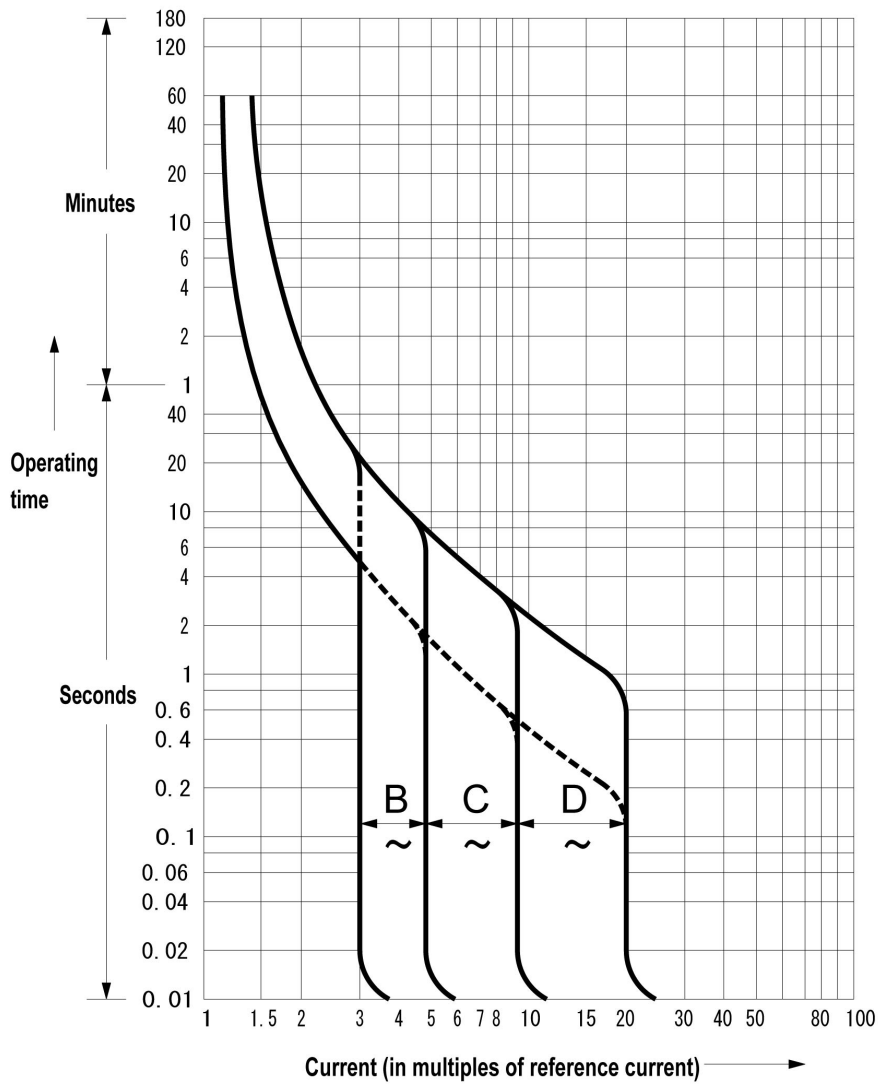
FIGURE 2.20 Distribution panel breaker characteristics

CHAPTER 3 Notes on Carrying In and Installing the Product

This chapter provides notes on carrying in and installing the
PRIMEQUEST 1000 series server.

3.1   Elevator Load Conditions

The rack with the device mounted is wider than the average computer. Therefore, to use an elevator to carry in the rack, the rack may need the side boards or doors removed before loading on the elevator. When using an elevator to carry in the rack, see the elevator load conditions in TABLE 3.1 Elevator load conditions and confirm that you are properly loading the rack on the elevator.

TABLE 3.1 Elevator load conditions

Elevator code	Load capacity [kg]	Width (*1)	Depth (*1)	Height (*1)	Width (*2)	Height (*2)	Rack Models 2742/2737/2724/ 2642/2624/2616 Models 1740/1640/1624
P-6-C0	450	1400	850	2300	800	2100	Cannot be loaded
P-9-C0	600	1400	1100	2300	800	2100	Cannot be loaded
P-11-C0	750	1400	1350	2300	800	2100	Can be loaded
P-13-C0	900	1600	1350	2300	900	2100	Can be loaded
P-15-C0	1000	1600 1800	1500 1300	2300	900 1000	2100	Can be loaded
P-17-C0	1150	1800 2000	1500 1350	2300	1000 1100	2100	Can be loaded
P-20-C0	1350	1800 2000	1700 1500	2300	1000 1100	2100	Can be loaded
P-24-C0	1600	2000 2150	1750 1600	2300	1100	2100	Can be loaded

*1 Interior dimensions of the cab [mm]

*2 Door opening dimensions [mm]

3.2　　Earthquake Preparedness Measures

The purpose of the earthquake preparedness measures is to prevent the computer from falling and breaking, and to ensure operator safety as well as quick system recovery. To prevent damage to the computer system from an earthquake, Fujitsu provides an earthquake countermeasure called "fixed construction." (A fixed construction prevents the device from falling by fixing it in place.)

The necessity of a fixed construction is determined from the following factors:
- Magnitude of floor vibrations at the installation site
- Whether the floor is a raised floor
- Device structure

Before choosing an earthquake countermeasure and performing the actual work for earthquake preparedness, consult with Fujitsu's engineering works department.

APPENDIX A   Racks

This appendix provides various information on the mounting racks for
the PRIMEQUEST 1000 series and PCI_Box.

A.1   Rack Mounting

The PRIMEQUEST 1000 series (including peripheral devices) has been developed and its operation guaranteed with the basic assumption that it is mounted in a Fujitsu 19-inch rack. The requirements in A.1.1 Arrangements for installation work must be satisfied for safe use of a unit mounted in a Fujitsu 19-inch rack.

When mounting the PRIMEQUEST products in a rack manufactured by another company, customers need to confirm on their own responsibility that the rack meets the PRIMEQUEST product specifications and requirements. See A.2.2 Requirements for mounting in a rack manufactured by another company.

For details on the models 2742/2737/2724/2642/2624/2616, contact the distributor where you purchased your product, or your sales representative.

A.1.1   Arrangements for installation work

Arrange the installation work by using the following steps.

Remarks

For the models 2742/2737/2724/2642/2624/2616, contact the distributor where you purchased your product, or your sales representative.

TABLE A.1 Arrangements for installation work

(1) Consider earthquake-resistant anchoring for rack installation.	(2) Select a rack.	(3) Select a fixed construction.	(4) Arrange for an optional earthquake-resistance kit.	Remarks
If the rack is fixed in place	Select a rack that comes without a stabilizer.	Fixed construction using an earthquake-resistance kit	Earthquake-resistance kit (*1)(*2)	*1 The engineer responsible arranges for the bolts and other parts that secure the rack to the building.
				*2 There are earthquake-resistance kits for the base racks and expansion racks. For base rack: Front part x 1, rear part x 1, side part x 2, and 1 set of rack fixing bolts For expansion rack: Front part x 1, rear part x 1, and 1 set of rack fixing bolts **Note** If an earthquake-resistance kit for a base rack is used for an expansion rack, there will be leftover parts. These are the parts

(1) Consider earthquake-resistant anchoring for rack installation.	(2) Select a rack.	(3) Select a fixed construction.	(4) Arrange for an optional earthquake-resistance kit.	Remarks
				to be attached to the sides of the rack. If an earthquake-resistance kit for an expansion rack is used for a base rack, there will not be enough parts. These are the parts to be attached to the sides of the rack. Operation without the side parts attached is not possible.
		Fixed construction using leveling feet	None (*1)	*1 The engineer responsible arranges for the bolts and other parts that secure the rack to the building.
If the rack is not fixed in place	Select a rack that comes with a stabilizer.	- (*3)(*4)	None	*3 Even if the selected rack comes with a stabilizer, it can also be fixed in place with an earthquake-resistance kit. However, among the components included in the earthquake-resistance kit, the leftover part will be the part to be attached to the front of the rack. *4 Even if the selected rack comes with a stabilizer, it can also be fixed in place with leveling feet while the stabilizer remains attached. In such cases, the stabilizer is not necessarily functional.

(1) Consider earthquake-resistant anchoring for rack installation.

Before selecting a 19-inch rack, consider whether to use earthquake-resistant anchoring for rack installation according to the customer's required earthquake-resistance level and the conditions in the building where the rack will be installed.

A rack fixed in place in a general building is earthquake-resistant up to an acceleration of 1000 gal.

For a rack not to be fixed in place, be sure to select one that comes with a stabilizer. Use the stabilizer to prevent the rack from toppling during maintenance of any device mounted in the rack. In such cases, the rack in a general building is earthquake-resistant up to an acceleration of 250 gal.

(2) Select a rack.

For a rack to be fixed in place, select one that comes without a stabilizer. See "(3) Select a fixed construction" below.

For a rack not to be fixed in place, be sure to select one that comes with a stabilizer. See TABLE A.1 Arrangements for installation work.

Note

For a rack not to be fixed in place, be sure to select one that comes with a stabilizer, regardless of whether the building or flooring has earthquake-resistant (seismic) features. Use the stabilizer to prevent the rack from toppling during maintenance of any device mounted in the rack.

(3) Select a fixed construction.

The two types of construction for fixing the rack in place are as follows:
- Construction using an optional earthquake-resistance kit
- Construction using leveling feet

After considering conditions such as the installation floor, select either construction type appropriate to the conditions.

To use an earthquake-resistance kit to fix the rack in place, see "(4) Arrange for an optional earthquake-resistance kit" below.

To use leveling feet to fix the rack in place, see TABLE A.1 Arrangements for installation work.

Note

Unless it is fixed to the floor, a rack that comes without a stabilizer cannot be used. The rack must be fixed in place to prevent it from toppling, such as during maintenance of a device mounted in the rack.

(4) Arrange for an optional earthquake-resistance kit.

To use an earthquake-resistance kit, arrange for the optional earthquake-resistance kit appropriate to the respective base or expansion rack.
- For Model 1740 base rack: 19R-17ST1
- For Model 1740 expansion rack: 19R-17ST2
- For Model 1640/1624 base rack: 19R-16ST1
- For Model 1640/1624 expansion rack: 19R-16ST2

A.2 Rack Mounting Requirements

This section describes rack mounting requirements.

- A.2.1 Requirements for mounting in a Fujitsu 19-inch rack
- A.2.2 Requirements for mounting in a rack manufactured by another company

Note

When mounting in the rack, do not hold the cabinet by the handle of a fan.
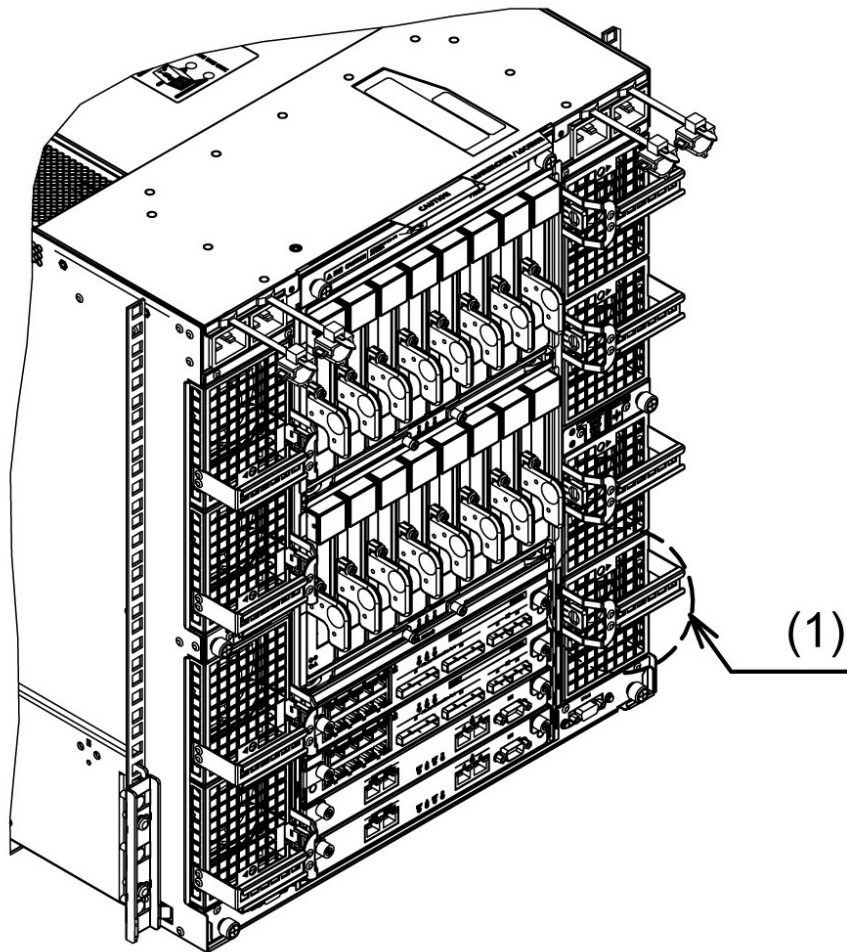
No.	Description
(1)	Handle of a fan

FIGURE A.1 Caution on rack mounting

A.2.1 Requirements for mounting in a Fujitsu 19-inch rack

This section explains the requirements for mounting in a Fujitsu 19-inch rack. For safe use of the PRIMEQUEST 1000 series server mounted in a Fujitsu 19-inch rack, observe the mounting requirements described below.

Recommended racks for mounting

The following table lists the recommended racks for mounting the PRIMEQUEST 1000 series server and PCI_Box.

TABLE A.2 Recommended racks for mounting

Fujitsu 19-inch rack	Depth (mm)	Open area ratio
Model 2742	1050	80%
Model 2737	1050	80%
Model 2724	1050	80%
Model 2642	1050	80%
Model 2624	1050	80%
Model 2616	1050	75%
Model 1740	1050	80%
Model 1640	1050	80%
Model 1624	1050	80%

TABLE A.3 PRIMEQUEST 1000 series external dimensions*

Model	Height	Width	Depth
PRIMEQUEST 1800E2/1800E	530 mm (12U)	440 mm (Panel included: 482 mm)	800 mm

* The external dimensions do not include protrusions.

Note

The Fujitsu 19-inch rack comes with a blank panel covering the front of each empty space that has no mounted device.

If warm exhaust air from the device circulates to the front of the rack and reenters the device, it may cause a temperature alarm and lead to a device failure.

Be sure to use the blank panel to cover the front of an empty space that has no mounted device.

Rack mounting requirements

The following table lists the requirements for mounting in one rack.

TABLE A.4 Rack mounting requirements

Model	Number of mountable units	Mounting area
PRIMEQUEST 1800E2/1800E	Up to 2 units	The bottom of the mounted device must not be below 1U. The top of the mounted device must not be above the upper limit (26U). (*)
PCI_Box	No mounting requirements (*)	

*:   For the models 2742/2737/2724/2642/2624/2616, the bottom of the mounted device must not be below 2U. It is not mountable at 1U of the lowest rack.

For details, contact the distributor where you purchased your product, or your sales representative.
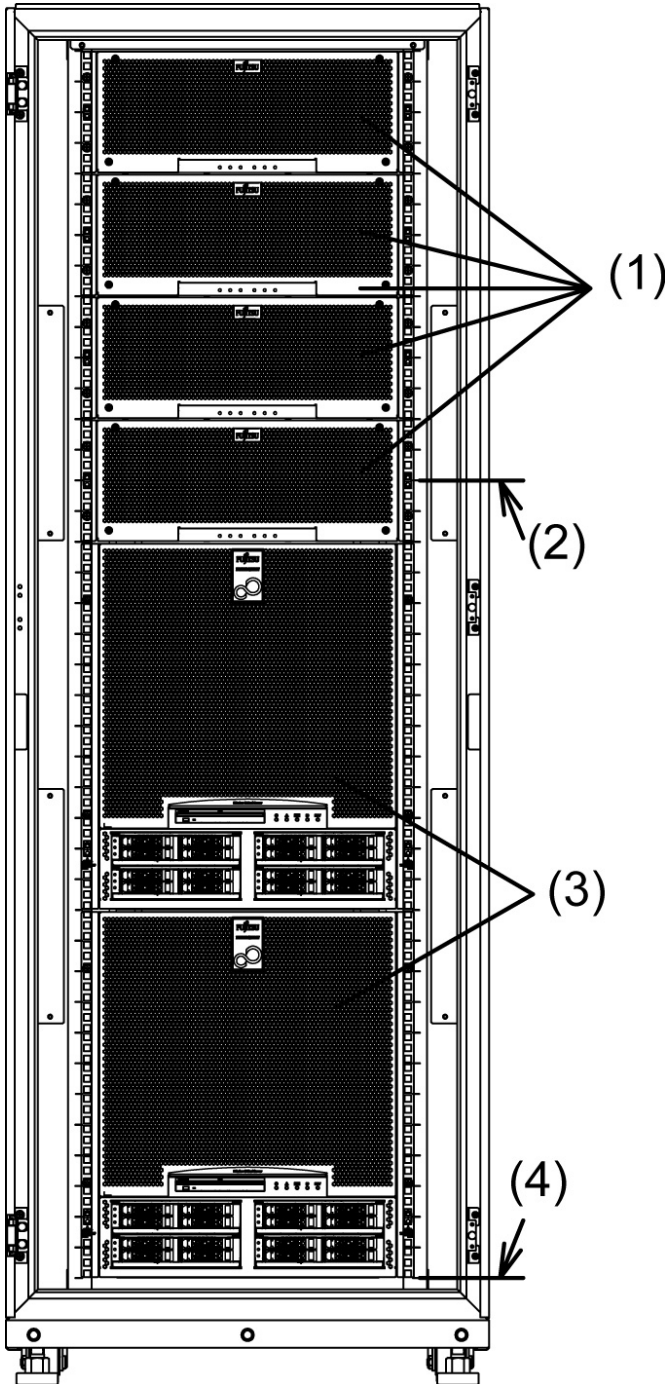
No.	Description
(1)	PCI_Box (4U)
(2)	PRIMEQUEST 1800E2/1800E upper limit position (26U)

No.	Description
(3)	PRIMEQUEST 1800E2/1800E cabinet (12U)
(4)	PRIMEQUEST 1800E2/1800E lower limit position (1U)

FIGURE A.2 Rack mounting requirements (PRIMEQUEST 1800E2/1800E)

Removing the cable holders from the Fujitsu 19-inch rack (only for mounting in the Models 2742/2737/2724/2642/2624/2616/1740/1640/1624)

If the attached cable holders are in the mounting area for the PRIMEQUEST 1000 series server in the Fujitsu 19-inch rack, remove the cable holders or adjust the mounting location of the server so that the mounting area does not include the locations of the cable holders.
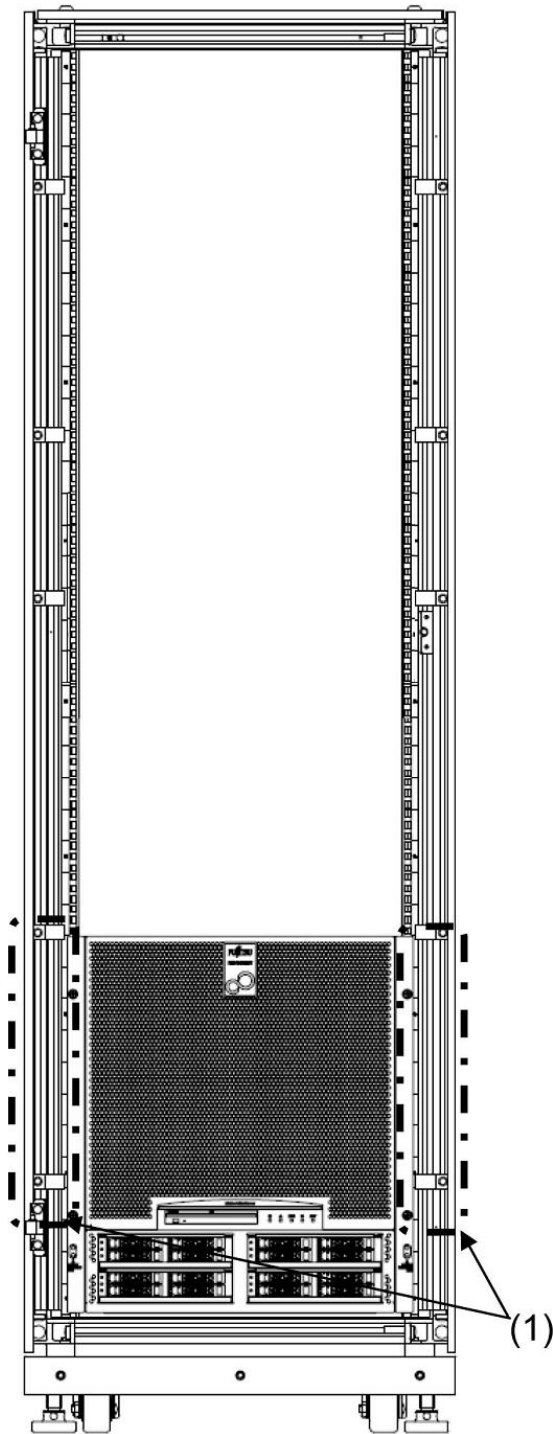
No.	Description
(1)	PRIMEQUEST 1800E2/1800E Locations of the cable holders to be removed (Both sides of the (upper) front cover)

FIGURE A.3 Cable holder locations

Procedure for removing cable holders (Model 1740)

Remove the cable holders by using a Phillips screwdriver.
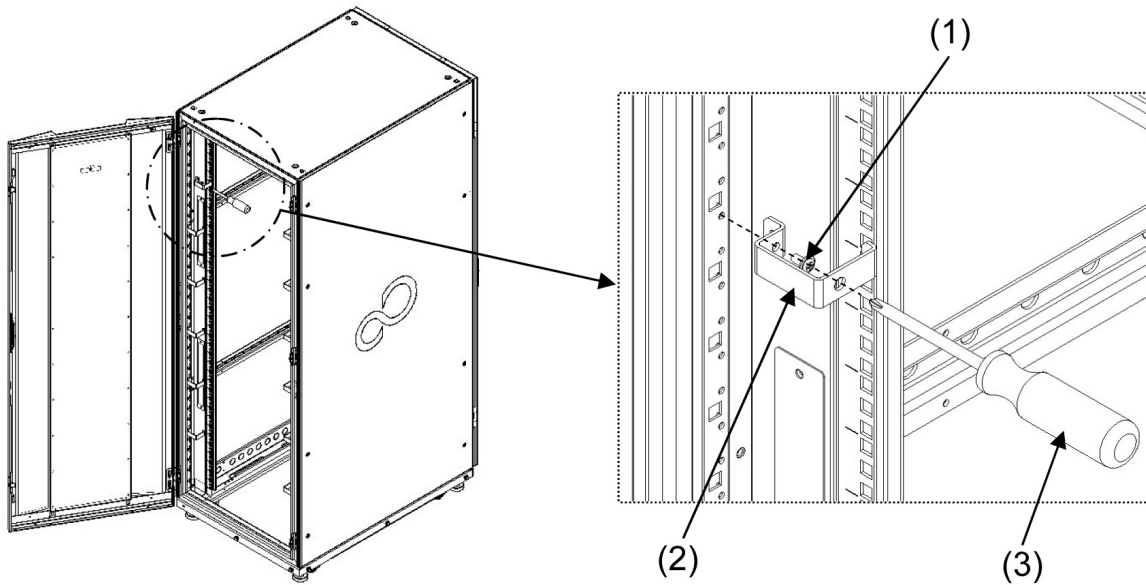
No.	Description
(1)	M5 screw
(2)	Cable holder
(3)	Phillips screwdriver

FIGURE A.4 Removing a cable holder (Model 1740)

Procedure for removing cable holders (Model 1640/Model 1624)

Remove the cable holders by using a Phillips screwdriver.

Before removing cable holders on the side of the door hinges, you need to remove the attached door.
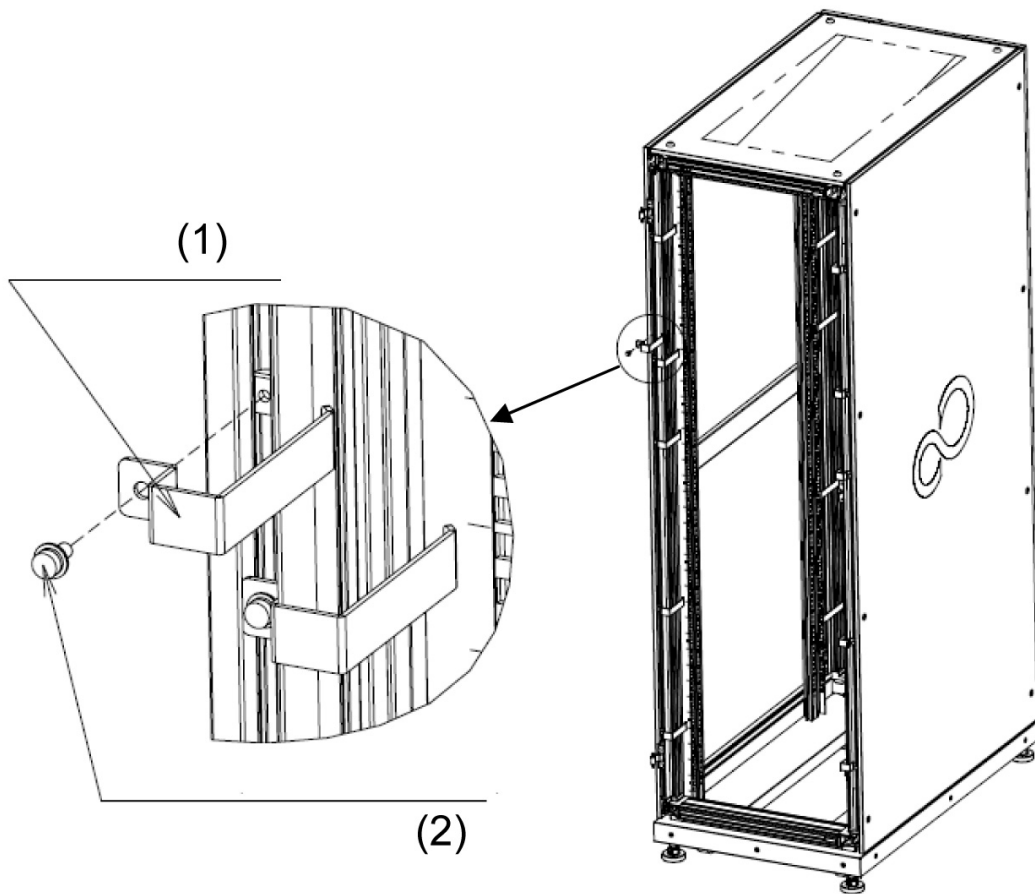
No.	Description
(1)	Cable holder
(2)	Machine screw (SEMS w/washer screw M5 x 12)

FIGURE A.5 Removing a cable holder (Model 1640/Model 1624)

A.2.2   Requirements for mounting in a rack manufactured by another company

When mounting the PRIMEQUEST products in a rack manufactured by another company, customers need to confirm on their own responsibility that the rack meets the PRIMEQUEST product specifications and requirements.

Note

Fujitsu does not guarantee there will be no problems arising from the mounting of the PRIMEQUEST 1000 series server (including peripheral devices) in a rack manufactured by another company.
Examples: Cooling problem due to an insufficient supply of cooling air because of the rack structure, and insufficient earthquake-resistance because the rack manufactured by another company is not strong enough
If mounting in a rack manufactured by another company cannot be avoided, confirm that the rack satisfies all of the following structural requirements.

Conditions of rack depth

The device is mounted in a rack using a rack mounting kit (supplied with the PRIMEQUEST 1000 series server). Therefore, the following conditions regarding distance must be satisfied. One condition is the allowable spacing between posts. The second condition is the length from the inside of the front cover to the front surface of the front rack posts. The third condition is the length from the front surface of the front rack posts to the inside of the rear cover.
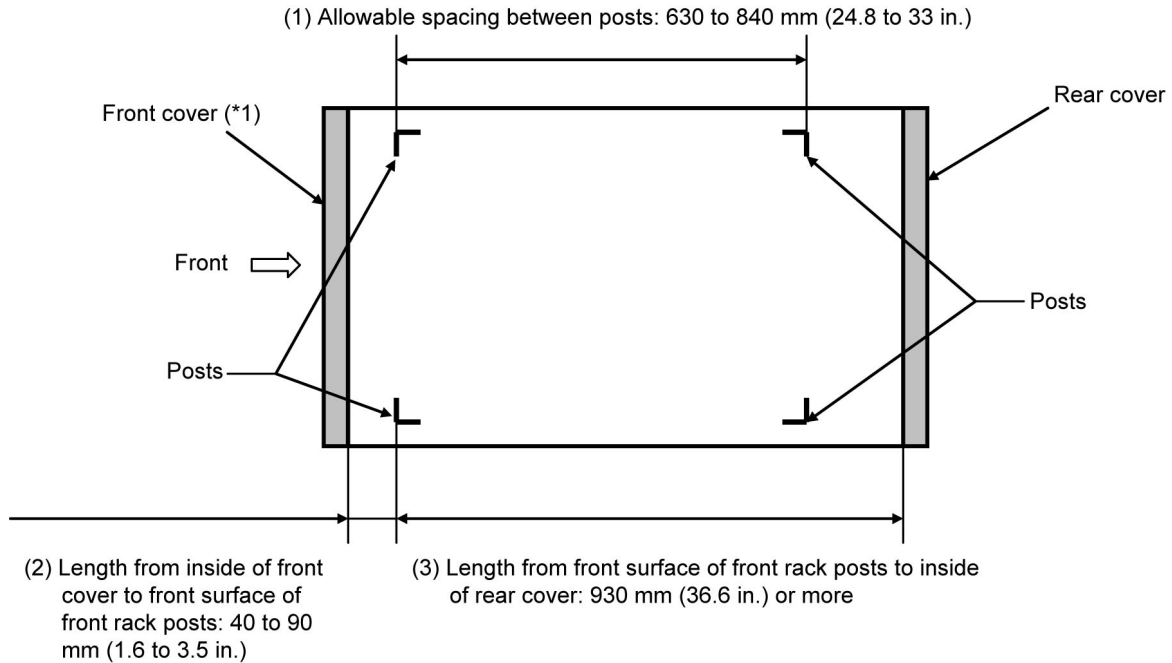
FIGURE A.6 Conditions of rack depth

Conditions regarding rack posts
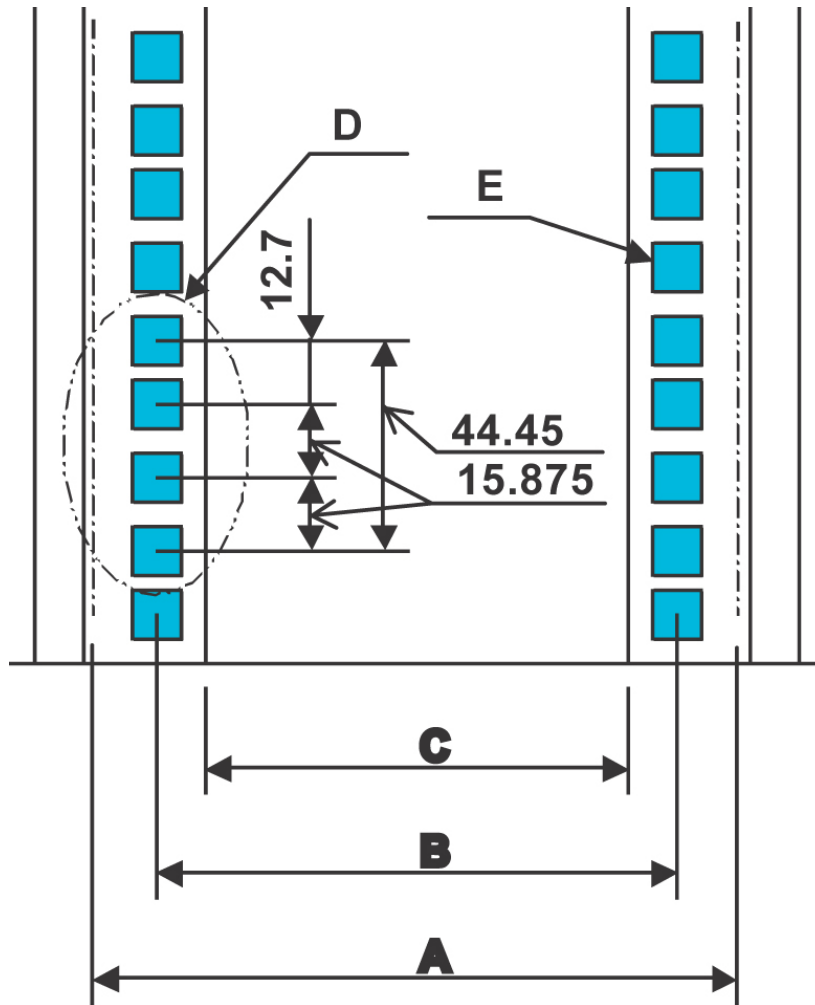
FIGURE A.7 Conditions regarding rack posts

A: Space for attaching the device front panel: 483 mm (19.0 in.) or more

B: Distance between holes on the left and right device mounting posts (common to the front and rear posts): 465 mm (18.3 in.)

C: Distance between the left and right posts (common to the front and rear posts): 450 mm (17.7 in.) or more

D: EIA standard, universal pitch

E: Length of each side of a square hole: 9 to 9.5 mm (0.354 to 0.374 in.)

Other conditions

Besides structural conditions, the following conditions must also be considered.

- Cooling of devices mounted in the rack

  Install the rack such that the temperature inside the rack satisfies the temperature conditions in 1.3 Installation Specifications.

  Especially, cover the front of empty spaces in the rack and take other such necessary measures to prevent exhaust air from devices from recirculating to the air intake.

- Securing the maintenance work area (service area)

  Secure the service area required for the maintenance work performed by a Fujitsu certified service engineer. Referring to the Fujitsu rack service areas in 1.4 Installation Area and to the installation manual of the rack used, determine the service areas.

A.3 Fujitsu 19-inch Racks

This section shows the types, outline drawings, and bottom view drawings of Fujitsu 19-inch racks.

Remarks

For the outline drawings and dimensions of the models 2742/2737/2724/2642/2624/2616, contact the distributor where you purchased your product, or your sales representative.

A.3.1 Types of 19-inch rack

TABLE A.5 Types of 19-inch rack lists the racks in which the PRIMEQUEST 1000 series server and PCI_Box can be mounted.

Remarks

For the racks on which models can be mounted, the models 2742/2737/2724/2642/2624/2616 are also available. For details, contact the distributor where you purchased your product, or your sales representative.

TABLE A.5 Types of 19-inch rack

| Item No.	Model name	Product name	Width (*1)	Depth (*1)	Height (*1)	Total weight capacity (*2)(*3)	Rack weight (*2)	Total rack weight (*2)	Remarks
1	19R-174A1	19-inch rack Model 1740 (base/with stabilizer) (standard)	700 (27.6)	1272 (50.1)	2000 (78.8)	800 (1760)	143 (315) (*4)	943 (2075)	40U with side boards
2	19R-174A2	19-inch rack Model 1740 (base/without stabilizer) (standard)	700 (27.6)	1050 (41.3)	2000 (78.8)	800 (1760)	135 (297)	935 (2057)	40U with side boards
3	19R-174B1	19-inch rack Model 1740 (expansion/ with stabilizer) (standard) (*5)	700 (27.6)	1272 (50.1)	2000 (78.8)	800 (1760)	110 (242) (*4)	910 (2002)	40U without side boards
4	19R-174B2	19-inch rack Model 1740	700 (27.6)	1050 (41.3)	2000 (78.8)	800 (1760)	102 (224)	902 (1984)	40U

Item No.	Model name	Product name	Width (*1)	Depth (*1)	Height (*1)	Total weight capacity (*2)(*3)	Rack weight (*2)	Total rack weight (*2)	Remarks
		(expansion/ without stabilizer) (standard) (*5)							without side boards
5	19R-164A1	19-inch rack Model 1640 (base/with stabilizer) (slim)	600 (23.6)	1050 (41.3)	2000 (78.8)	800 (1760)	126 (277) (*4)	926 (2037)	40U with side boards
6	19R-164A2	19-inch rack Model 1640 (base/without stabilizer) (slim)	600 (23.6)	1050 (41.3)	2000 (78.8)	800 (1760)	118 (256)	918 (2019)	40U with side boards
7	19R-164B1	19-inch rack Model 1640 (expansion/ with stabilizer) (slim)	600 (23.6)	1050 (41.3)	2000 (78.8)	800 (1760)	94 (206) (*4)	894 (1966)	40U without side boards
8	19R-164B2	19-inch rack Model 1640 (expansion/ without stabilizer) (slim)	600 (23.6)	1050 (41.3)	2000 (78.8)	800 (1760)	86 (189)	886 (1949)	40U without side boards
9	19R-162A1	19-inch rack Model 1624 (base/with stabilizer)	600 (23.6)	1050 (41.3)	1264 (49.7)	480 (1056)	94 (206) (*4)	574 (1262)	24U with side boards
10	19R-162A2	19-inch rack Model 1624 (base/without stabilizer) (slim)	600 (23.6)	1050 (41.3)	1264 (49.7)	480 (1056)	86 (189)	566 (1245)	24U with side boards
11	19R-162B1	19-inch rack Model 1624	600 (23.6)	1050 (41.3)	1264 (49.7)	480 (1056)	75 (165) (*4)	555 (1221)	24U without side boards

Item No.	Model name	Product name	Width (*1)	Depth (*1)	Height (*1)	Total weight capacity (*2)(*3)	Rack weight (*2)	Total rack weight (*2)	Remarks
		(expansion/ with stabilizer) (slim)							
12	19R-162B2	19-inch rack Model 1624 (expansion/ without stabilizer) (slim)	600 (23.6)	1050 (41.3)	1264 (49.7)	480 (1056)	67 (147)	547 (1203)	24U without side boards

*1 Rack size [mm (in.)]

*2 Weight [kg (lb.)]

*3 The value does not include the weight of the rack itself.

*4 The rack weight includes the weight of the stabilizer that prevents the rack from toppling.

*5 To use an expansion rack (MC-R7RC21), connect it to a base rack (MC-R7RC11). Expansion racks (MC-R7RC21) can also be connected together.

A.3.2   Outline drawings of 19-inch racks

This section provides outline drawings of each rack.

Remarks

For the outline drawings and dimensions of the models 2742/2737/2724/2642/2624/2616, contact the distributor where you purchased your product, or your sales representative.

19-inch rack Model 1740 (base/with stabilizer)
19-inch rack Model 1740 (base/without stabilizer)
19-inch rack Model 1740 (expansion/with stabilizer)
19-inch rack Model 1740 (expansion/without stabilizer)
19-inch rack Model 1640 (base/with stabilizer)
19-inch rack Model 1640 (base/without stabilizer)
19-inch rack Model 1640 (expansion/with stabilizer)
19-inch rack Model 1640 (expansion/without stabilizer)
19-inch rack Model 1624 (base/with stabilizer)
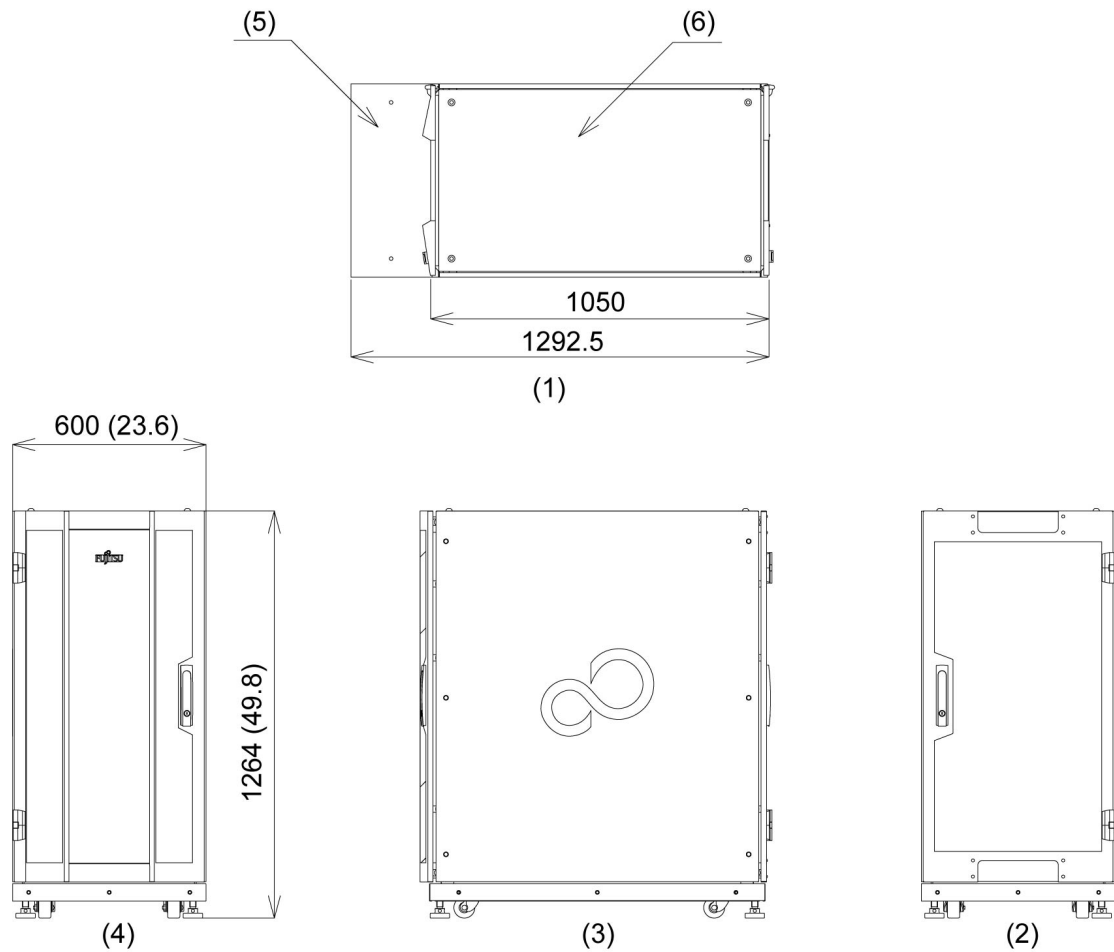19-inch rack Model 1624 (base/without stabilizer)
19-inch rack Model 1624 (expansion/with stabilizer)
19-inch rack Model 1624 (expansion/without stabilizer)

19-inch rack Model 1740 (base/with stabilizer)

Unit: mm (in.)

No.	Description
(1)	Top view
(2)	Rear view
(3)	Right side view
(4)	Front view
(5)	Stabilizer
(6)	Top cover

FIGURE A.8 Outline drawing of the 19-inch rack Model 1740 (base/with stabilizer)

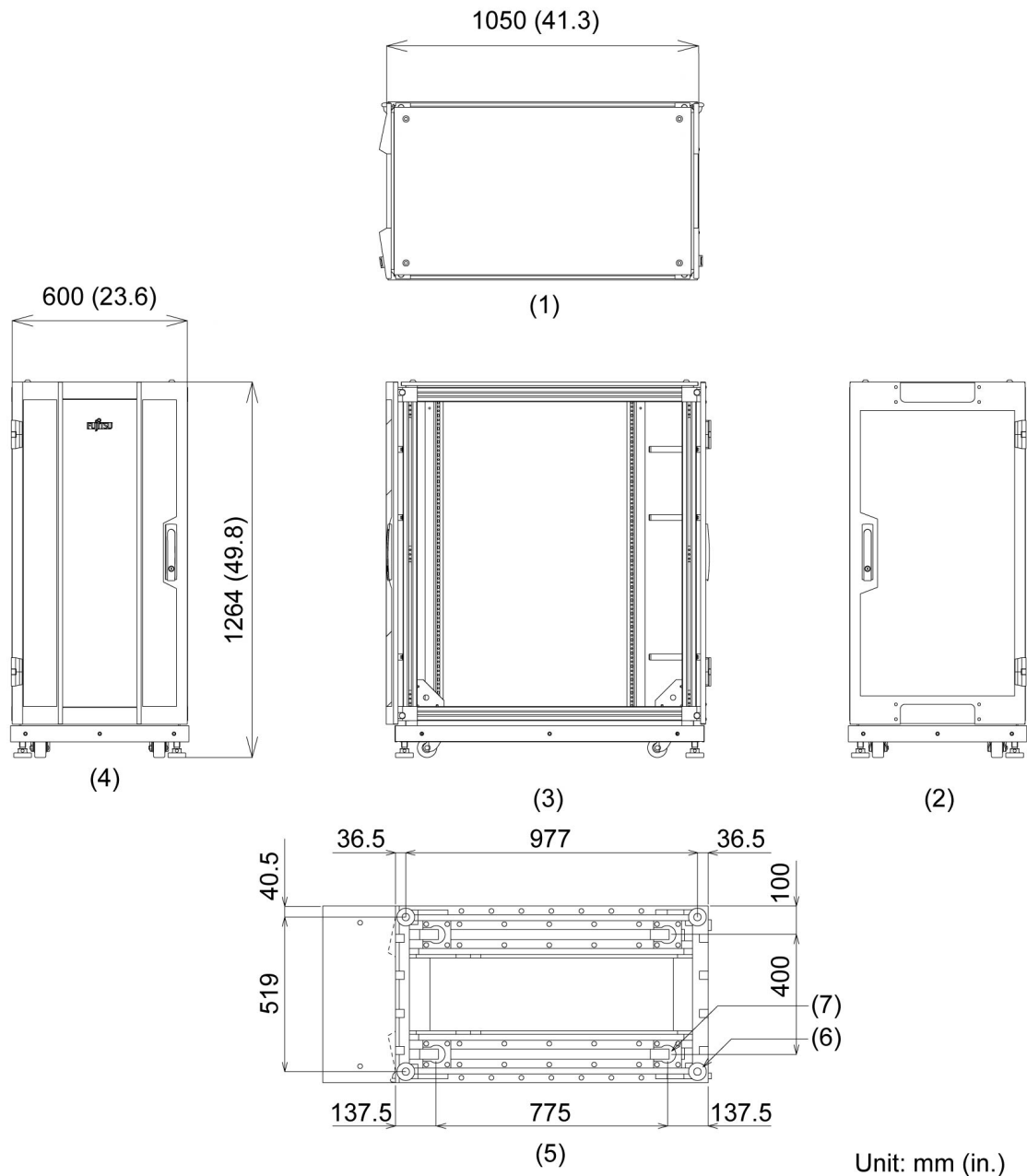## 19-inch rack Model 1740 (base/without stabilizer)

1050 (41.3)

(1)

700 (27.6)

2000 (78.8)

(4)

(3)

(2)
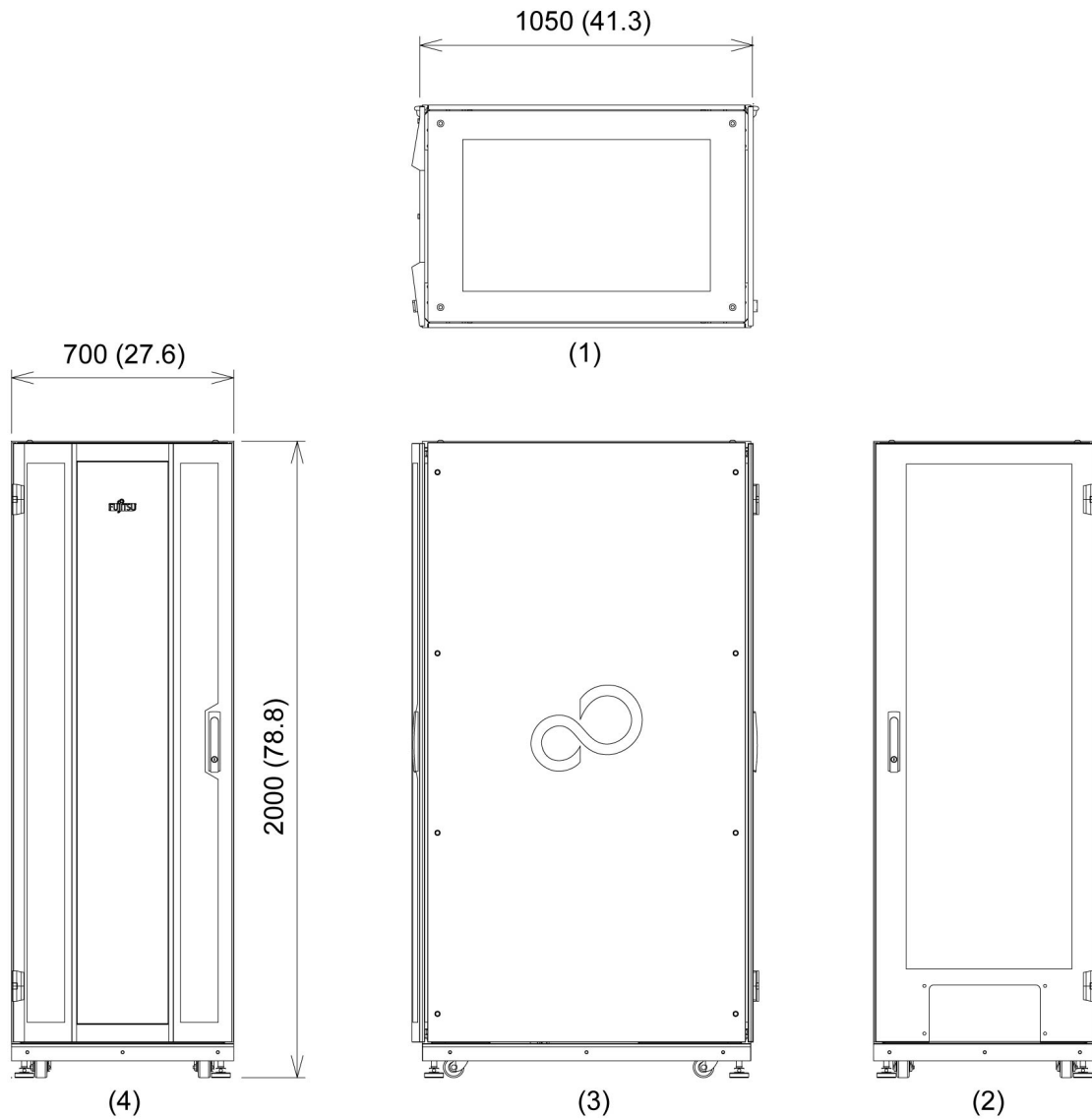
Unit: mm (in.)

No.	Description
(1)	Top view
(2)	Rear view
(3)	Right side view
(4)	Front view

FIGURE A.9 Outline drawing of the 19-inch rack Model 1740 (base/without stabilizer)

19-inch rack Model 1740 (expansion/with stabilizer)

1050 (41.3)

(1)

700 (27.6)

2000 (78.8)

(4)

(3)

(2)

60   930   60

55.5

45

610

589

(7)

(6)

45

165   720   165

55.5

(5)
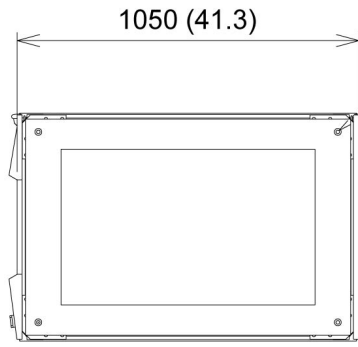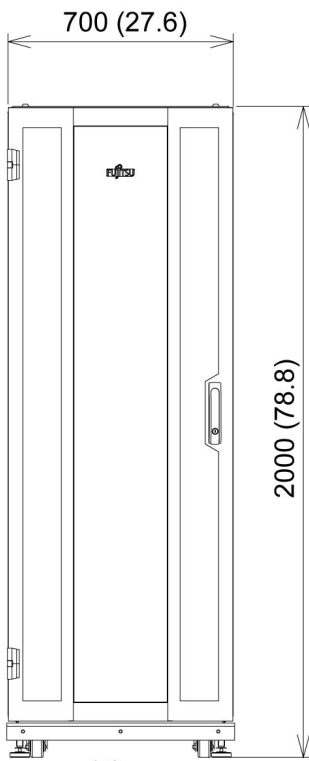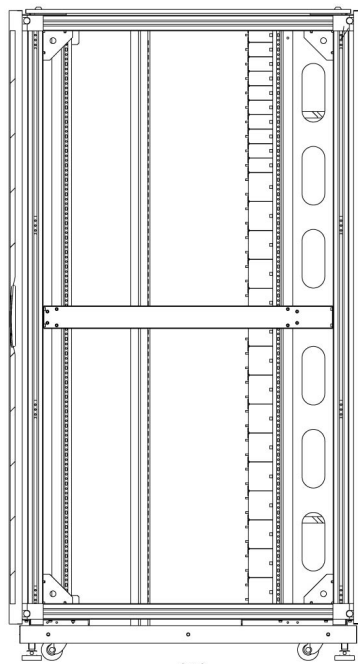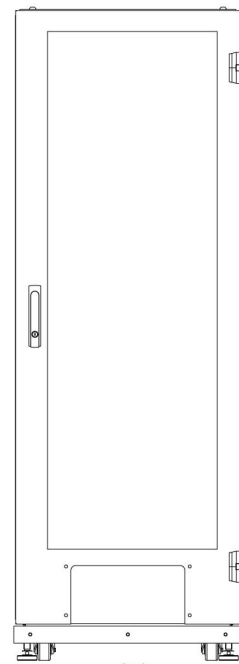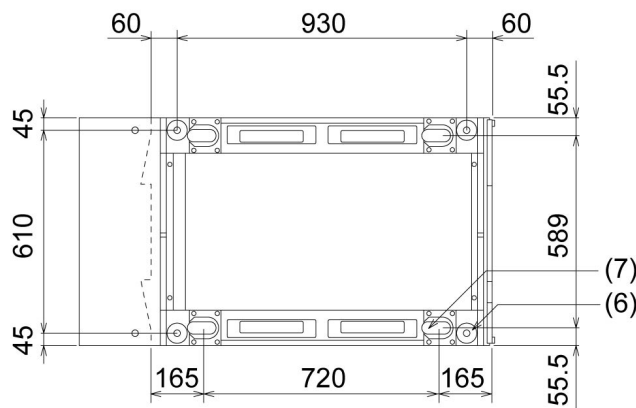
Unit: mm (in.)

No.	Description
(1)	Top view
(2)	Rear view
(3)	Right side view
(4)	Front view
(5)	Bottom view
(6)	Leveling foot
(7)	Caster

FIGURE A.10 Outline drawing of the 19-inch rack Model 1740 (expansion/with stabilizer)

19-inch rack Model 1740 (expansion/without stabilizer)

1050 (41.3)

(1)

700 (27.6)

2000 (78.8)

(4)   (3)   (2)
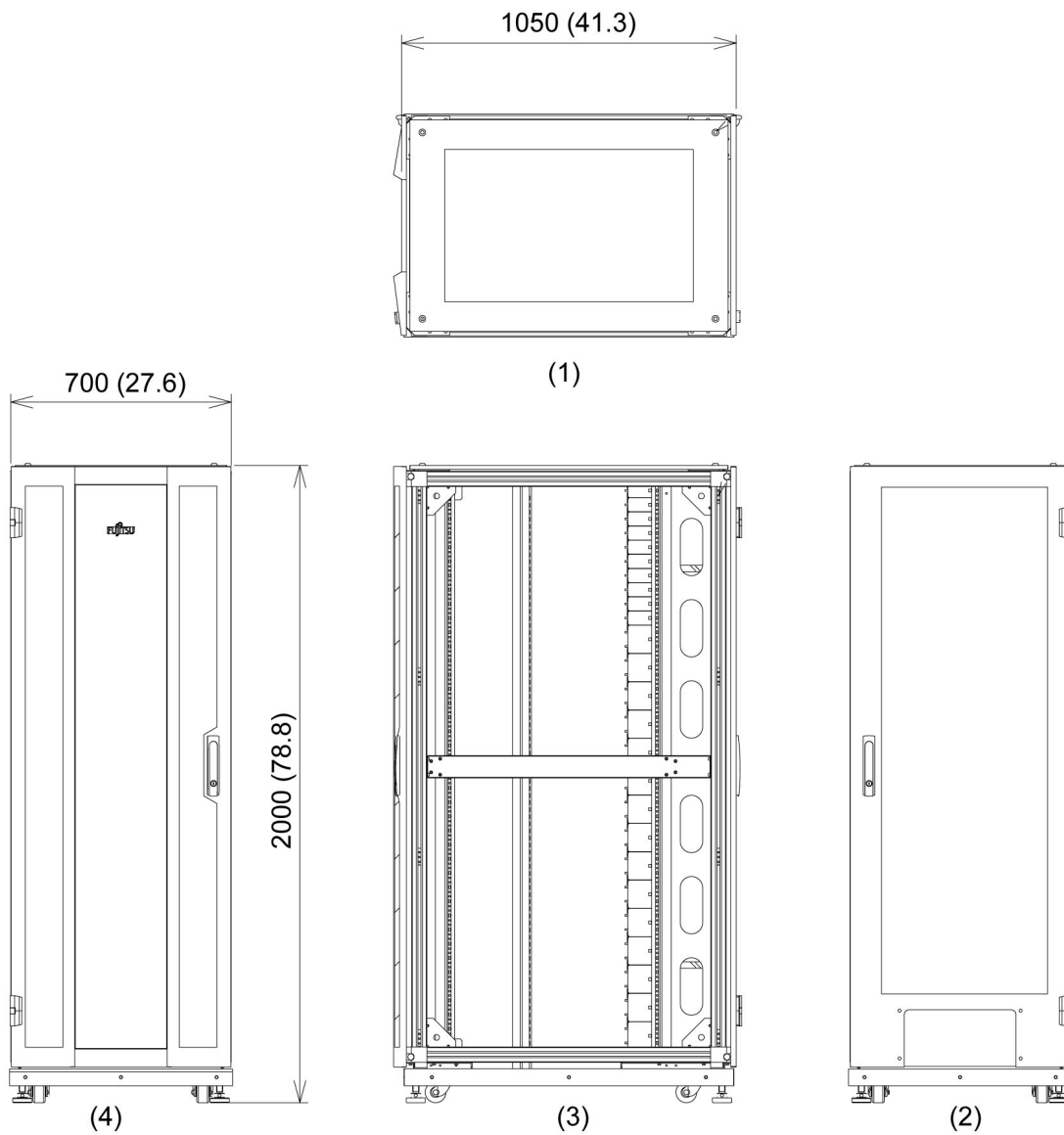
Unit: mm (in.)

No.	Description
(1)	Top view
(2)	Rear view
(3)	Right side view
(4)	Front view

FIGURE A.11 Outline drawing of the 19-inch rack Model 1740 (expansion/without stabilizer)

19-inch rack Model 1640 (base/with stabilizer)
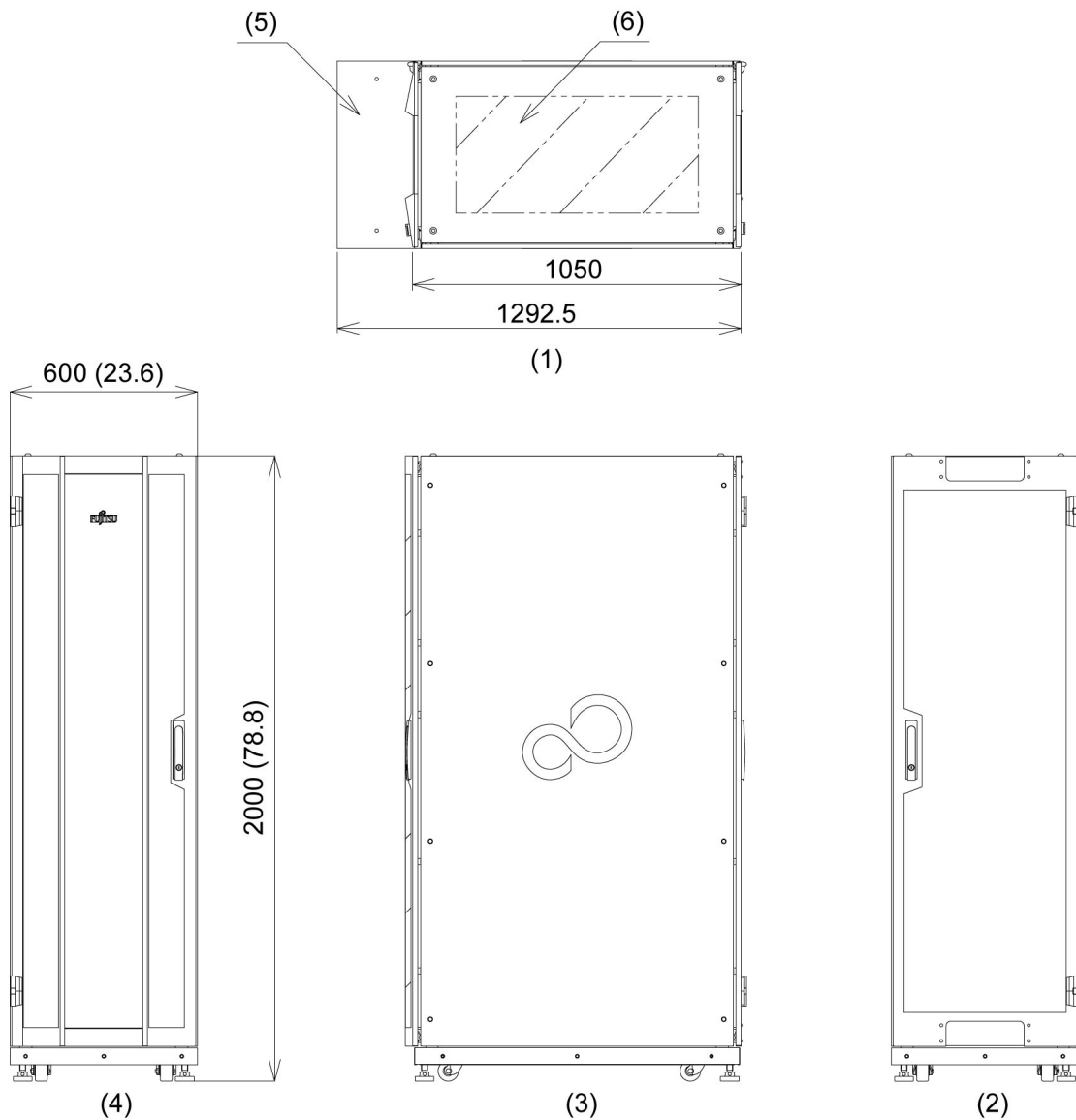
Unit: mm (in.)

No.	Description
(1)	Top view
(2)	Rear view
(3)	Right side view
(4)	Front view
(5)	Stabilizer
(6)	Top cover

FIGURE A.12 Outline drawing of the 19-inch rack Model 1640 (base/with stabilizer)

19-inch rack Model 1640 (base/without stabilizer)

1050 (41.3)

(1)

600 (23.6)

2000 (78.8)

(4)　　　　　(3)　　　　　(2)
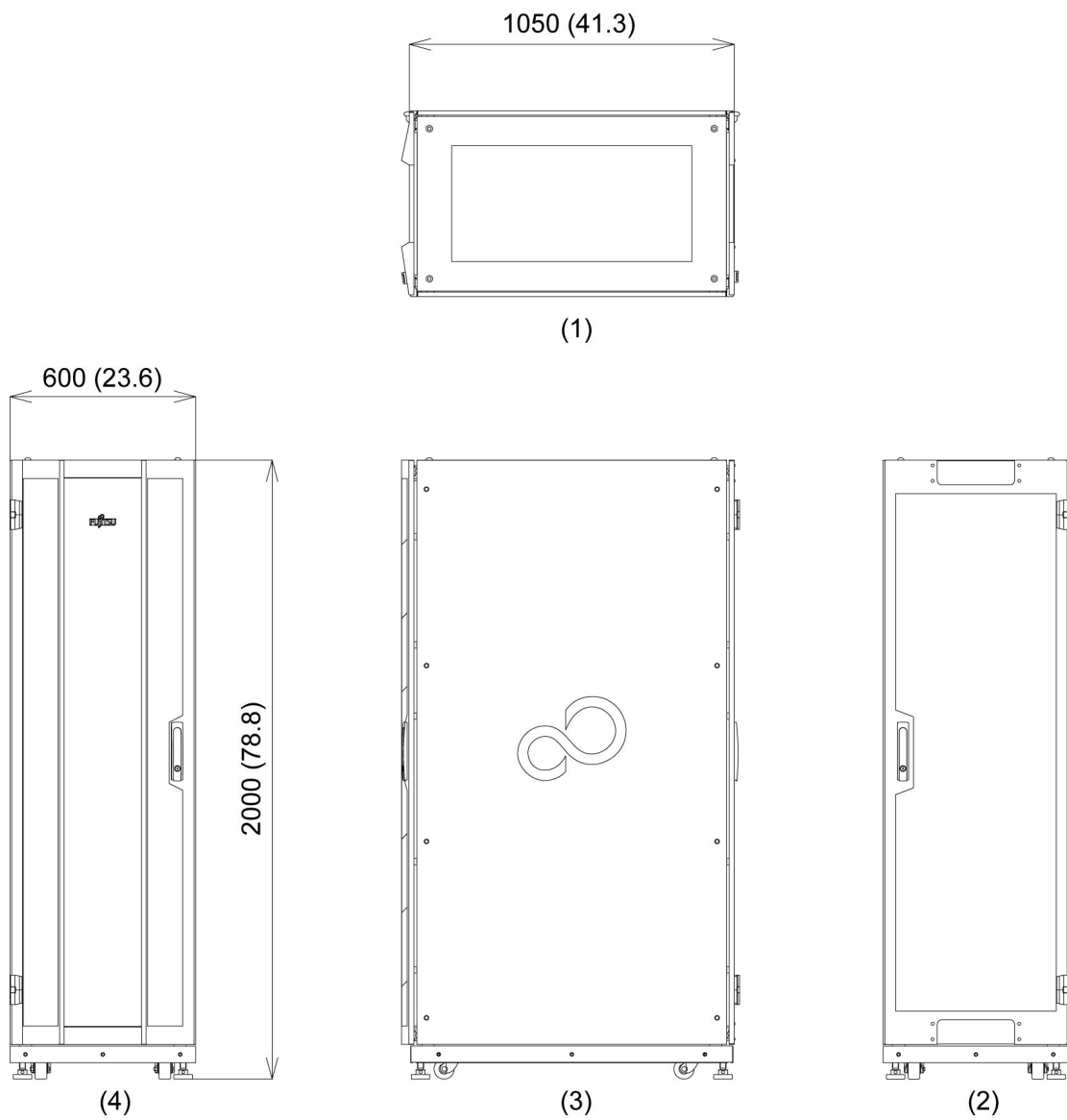
Unit: mm (in.)

No.	Description
(1)	Top view
(2)	Rear view
(3)	Right side view
(4)	Front view

FIGURE A.13 Outline drawing of the 19-inch rack Model 1640 (base/without stabilizer)

19-inch rack Model 1640 (expansion/with stabilizer)

1050 (41.3)

(1)

600(23.6)

2000 (78.8)

(4)

(3)

(2)

36.5   977   36.5

40.5

100

519

400

(7)
(6)

137.5   775   137.5

(5)

Unit: mm (in.)
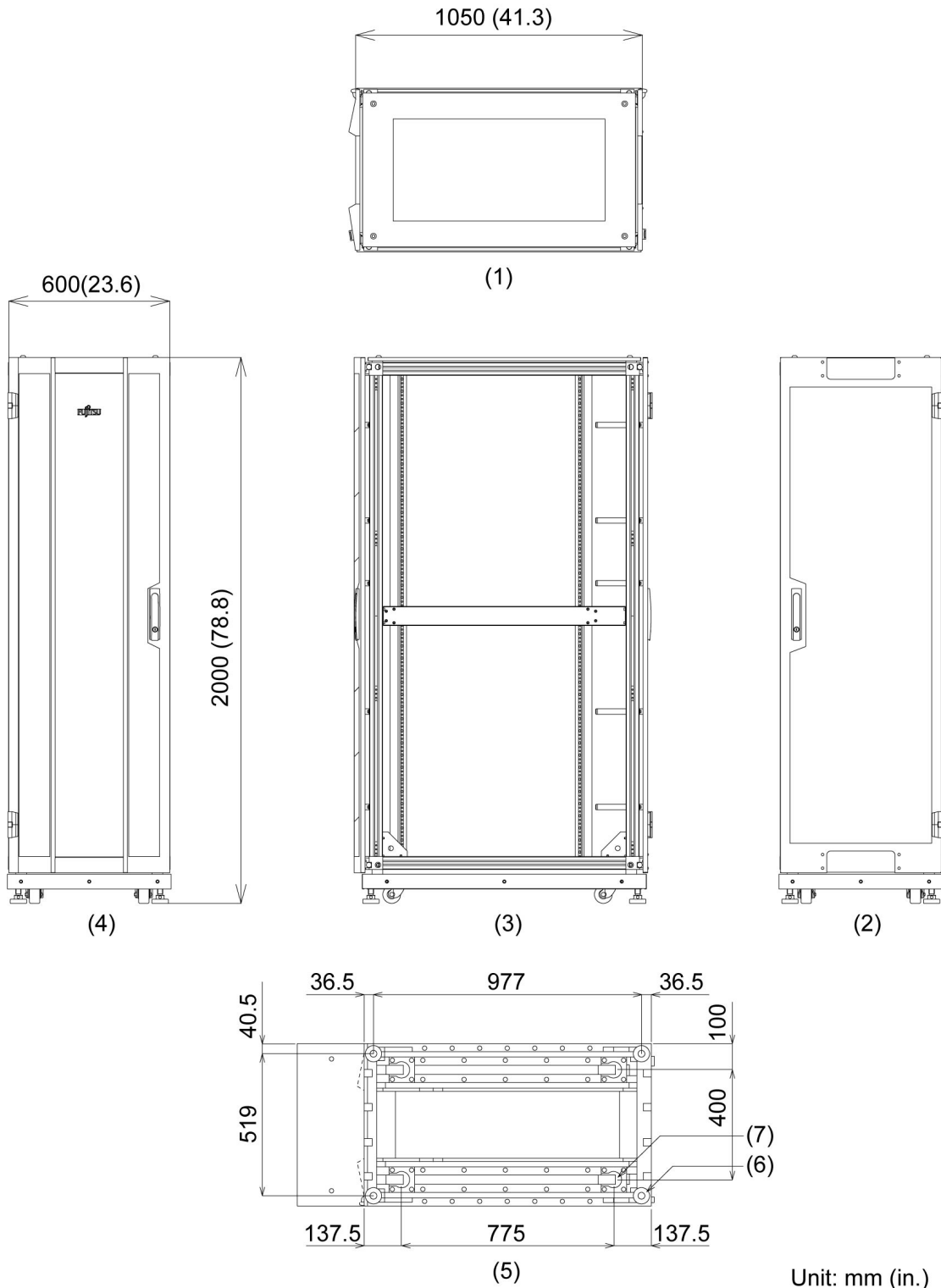
No.	Description
(1)	Top view
(2)	Rear view
(3)	Right side view

No.	Description
(4)	Front view
(5)	Bottom view
(6)	Leveling foot
(7)	Caster

FIGURE A.14 Outline drawing of the 19-inch rack Model 1640 (expansion/with stabilizer)

19-inch rack Model 1640 (expansion/without stabilizer)

1050 (41.3)

(1)

600 (23.6)

2000 (78.8)

(4)   (3)   (2)
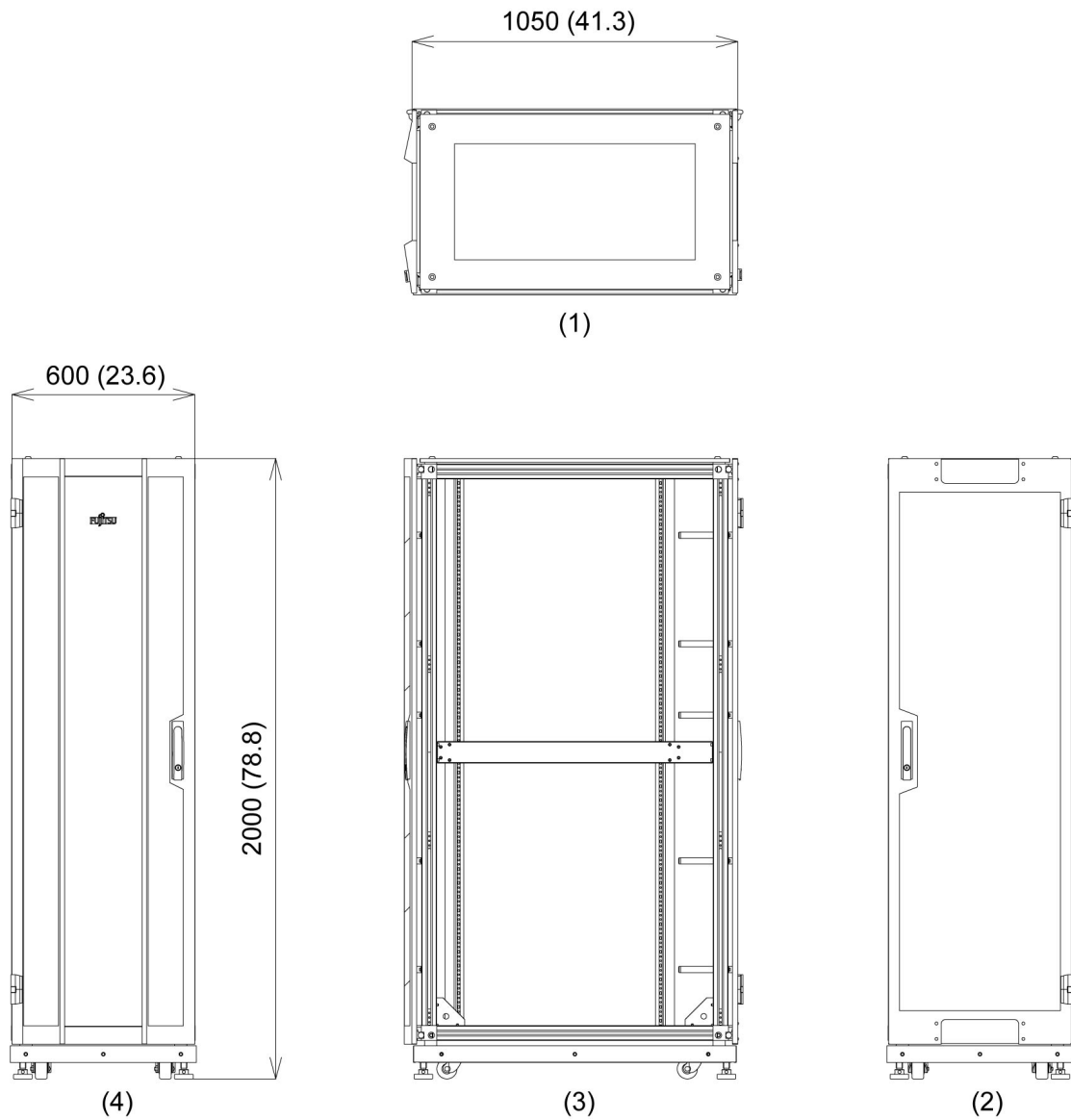
Unit: mm (in.)

No.	Description
(1)	Top view

No.	Description
(2)	Rear view
(3)	Right side view
(4)	Front view

FIGURE A.15 Outline drawing of the 19-inch rack Model 1640 (expansion/without stabilizer)

19-inch rack Model 1624 (base/with stabilizer)

Unit: mm (in.)

No.	Description
(1)	Top view
(2)	Rear view
(3)	Right side view
(4)	Front view
(5)	Stabilizer

No.	Description
(6)	Top cover

FIGURE A.16 Outline drawing of the 19-inch rack Model 1624 (base/with stabilizer)

19-inch rack Model 1624 (base/without stabilizer)

1050 (41.3)

(1)

600 (23.6)

1264 (49.8)

(4)   (3)   (2)
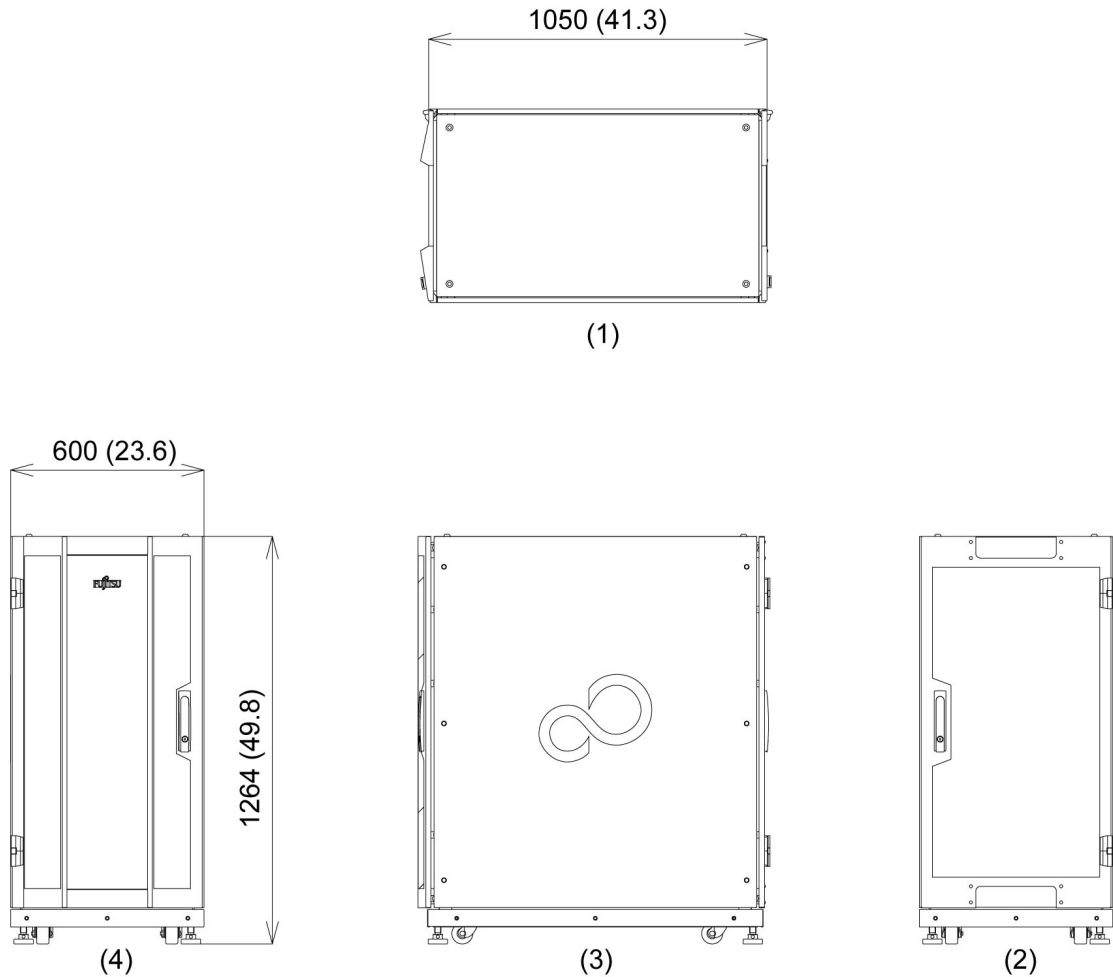
Unit: mm (in.)

No.	Description
(1)	Top view
(2)	Rear view
(3)	Right side view
(4)	Front view

FIGURE A.17 Outline drawing of the 19-inch rack Model 1624 (base/without stabilizer)

19-inch rack Model 1624 (expansion/with stabilizer)

1050 (41.3)

(1)

600 (23.6)

1264 (49.8)

(4)

(3)

(2)

36.5   977   36.5

40.5

100

519

400

(7)
(6)

137.5   775   137.5

(5)

Unit: mm (in.)

No.	Description
(1)	Top view
(2)	Rear view
(3)	Right side view
(4)	Front view
(5)	Bottom view
(6)	Leveling foot
(7)	Caster

FIGURE A.18 Outline drawing of the 19-inch rack Model 1624 (expansion/with stabilizer)

19-inch rack Model 1624 (expansion/without stabilizer)

1050 (41.3)

(1)

600 (23.6)

1264 (49.8)

(4)   (3)   (2)
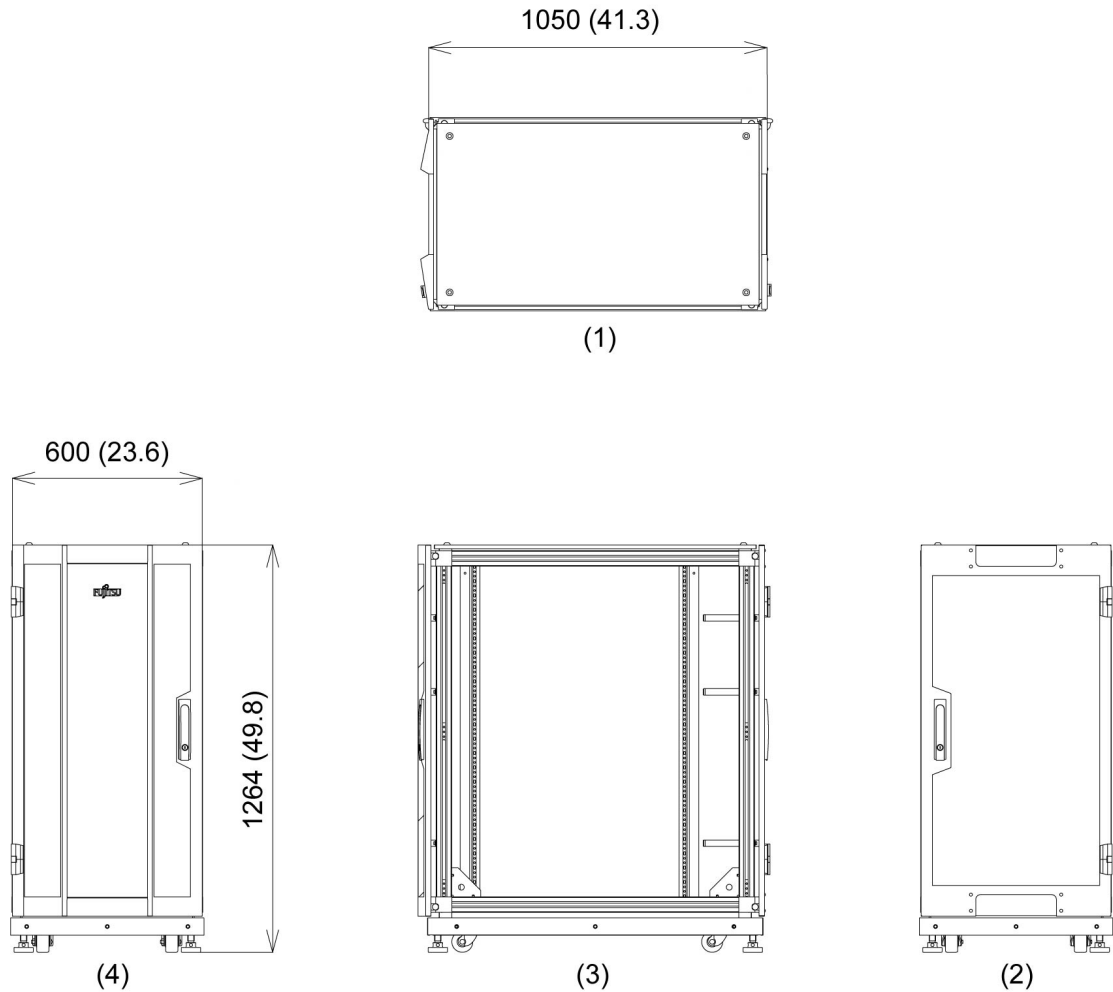
Unit: mm (in.)

No.	Description
(1)	Top view
(2)	Rear view
(3)	Right side view
(4)	Front view

FIGURE A.19 Outline drawing of the 19-inch rack Model 1624 (expansion/without stabilizer)

A.3.3   Bottom view drawings of 19-inch racks

This section provides bottom view drawings of 19-inch racks.

Bottom view drawing of the (standard) 19-inch rack
Bottom view drawing of the (slim) 19-inch rack

Bottom view drawing of the (standard) 19-inch rack

Key

⊠ : Cable opening

⊕ : Caster

◯ : Leveling foot (Each leveling foot has an
M20 screw hole with a depth of 17 mm at the center. It can be used to secure the rack in place.)

○ : Hole for securing the stabilizer to the floor

▨ : Stabilizer (to prevent the rack from toppling)

▧ : Stabilizer (to secure the rack in place for earthquake resistance)

FIGURE A.20 Bottom view drawing of the (standard) 19-inch rack

Bottom view drawing of the (slim) 19-inch rack
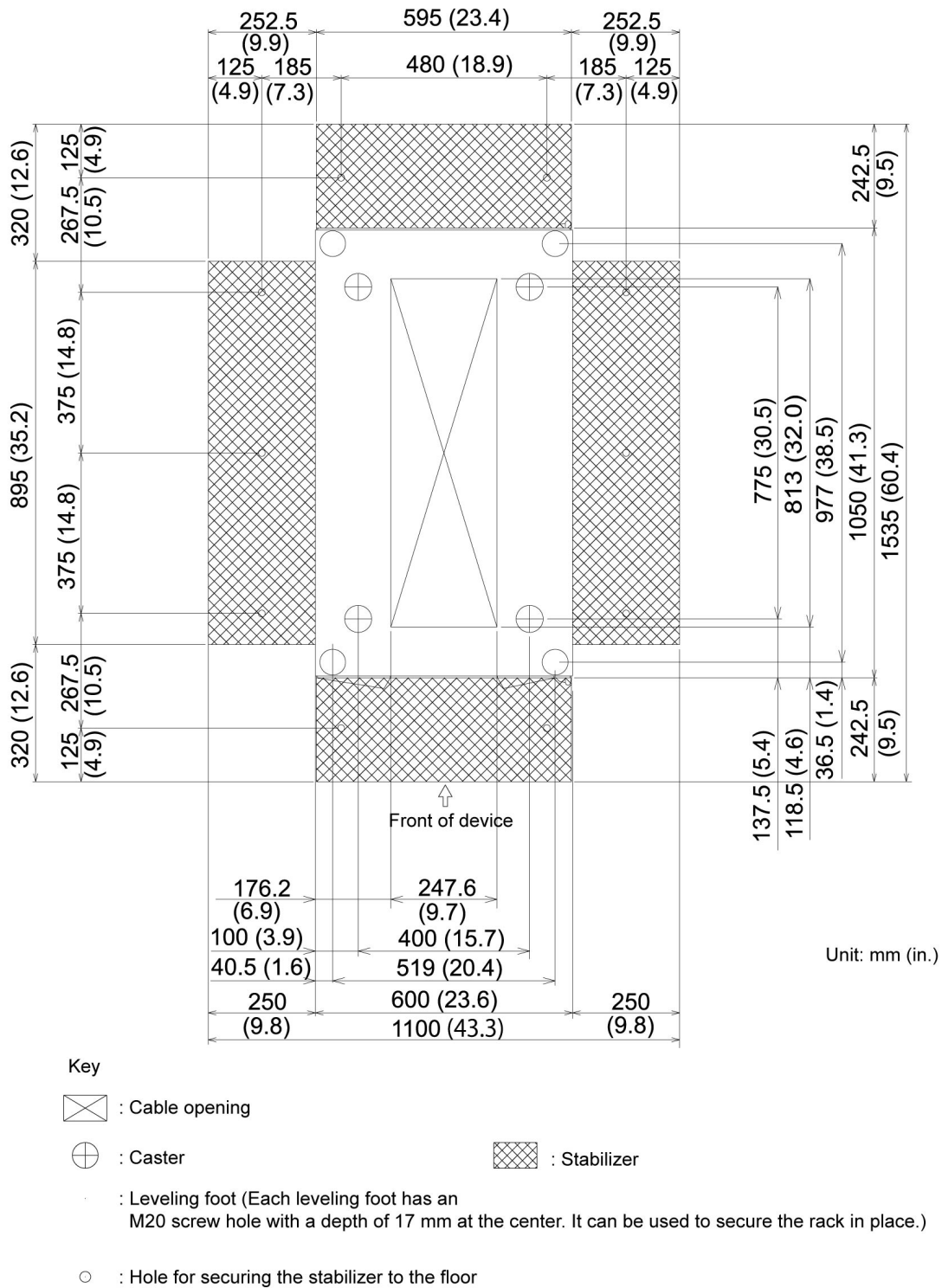
FIGURE A.21 Bottom view drawing of the (slim) 19-inch rack

Bottom view drawing of the rack equipped with the pullout stabilizer (standard type only)

Key
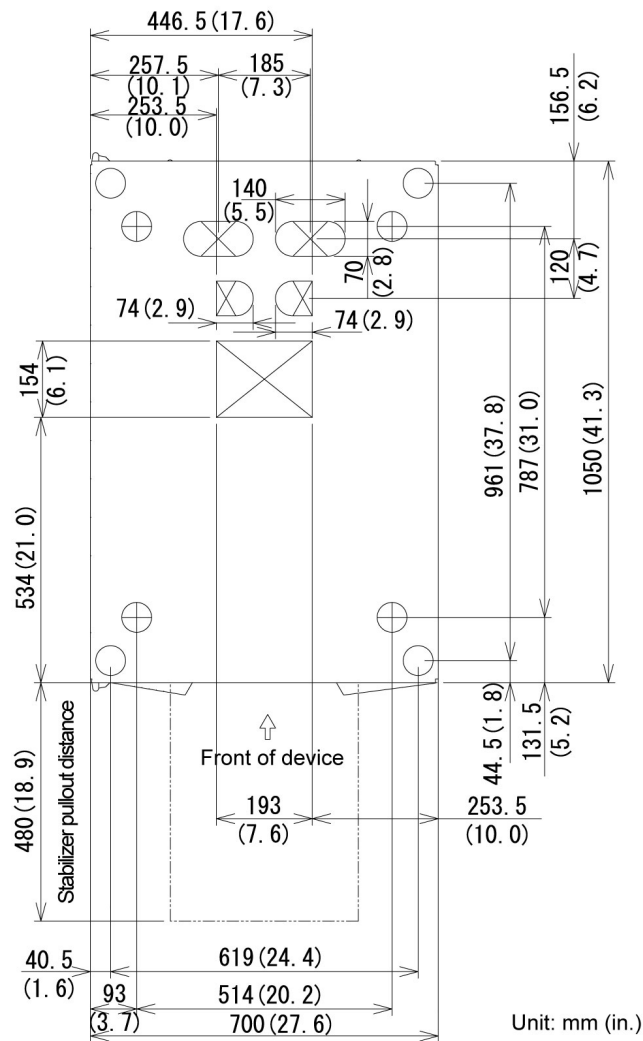
⊠ : Cable opening

⊕ : Caster

◯ : Leveling foot (Each leveling foot has an M20 screw hole with a depth of 17 mm at the center.
It can be used to secure the rack in place.)

FIGURE A.22 Bottom view drawing of the rack equipped with the pullout stabilizer (standard type only)

Bottom view drawing of connected 19-inch racks (standard)
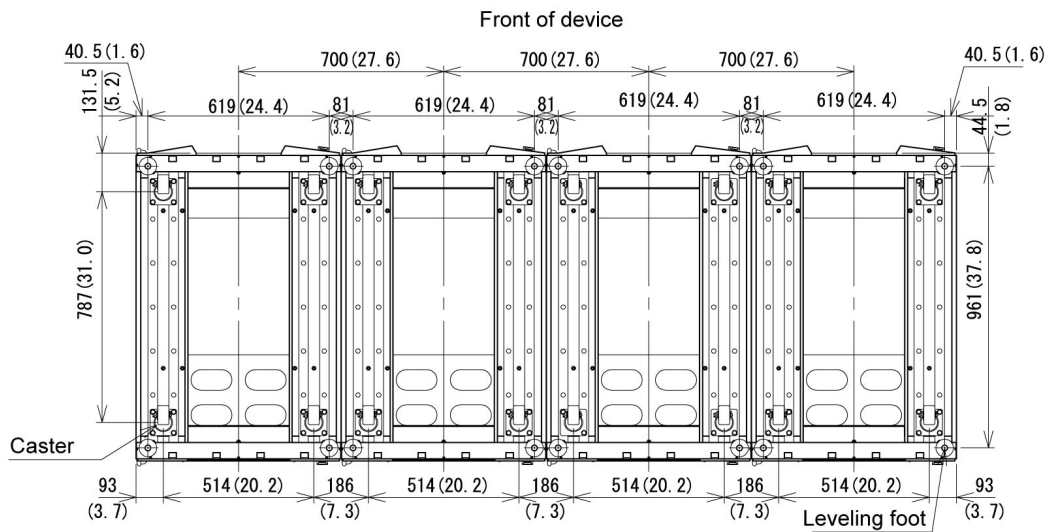
FIGURE A.23 Bottom view drawing of connected 19-inch racks (standard)

Bottom view drawing of connected 19-inch racks (slim)
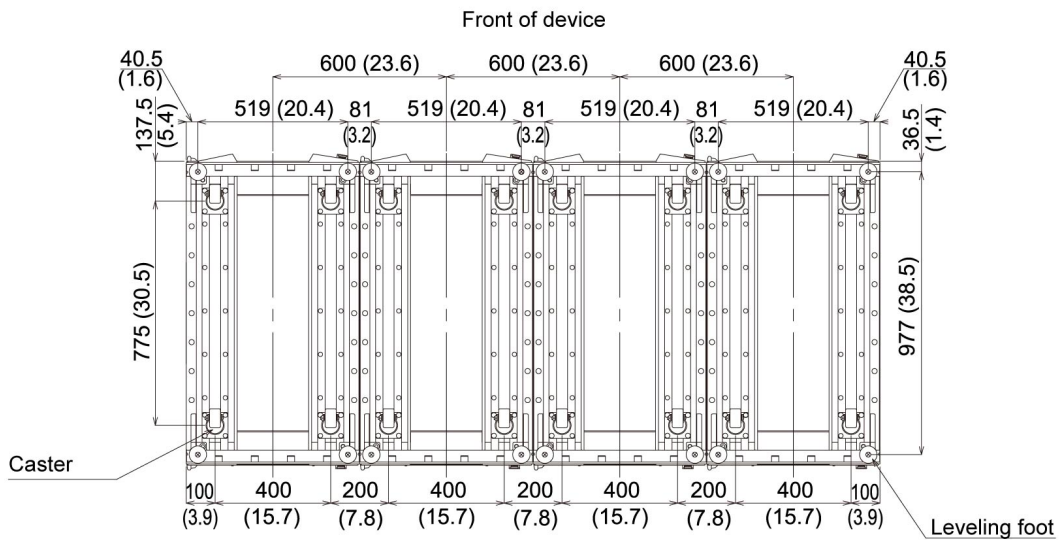
FIGURE A.24 Bottom view drawing of connected 19-inch racks (slim)

APPENDIX B   UPC Interface

This appendix describes the UPC interface that can be used with the
PRIMEQUEST 1000 series.

B.1   Overview

The CVCF provides a stable power supply to the system even in the event of a power abnormality or major power outage.

Through a connection between the CVCF and a UPC port on the main unit with a signal cable, the CVCF can notify the main unit of abnormal power conditions when it detects them. On receiving such notification, the main unit performs emergency shutdown processing, and thus can safely stop operation.

The following figure shows the locations of the UPC ports of the PRIMEQUEST 1000 series:
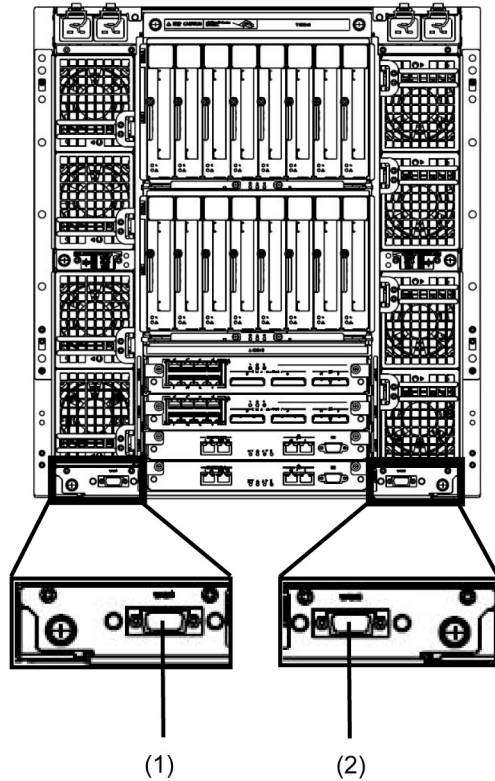
No.	Description
(1)	UPC#1 port
(2)	UPC#0 port

FIGURE B.1 UPC port locations (PRIMEQUEST 1800E2/1800E)

B.2   Signal Cable

For the signal cable, use a shielded-pair cable that satisfies the following specifications.

- Direct current resistance (round trip/one pair): 400 W/km or lower
- Cable length: up to 10 m (33 ft.)

B.3 Connection of Main Unit and CVCF and Signal Line Definitions

This section shows the connection of the main unit and CVCF. This section also provides definitions of the signal lines.

The figure below is a connection diagram of the main unit and CVCF.
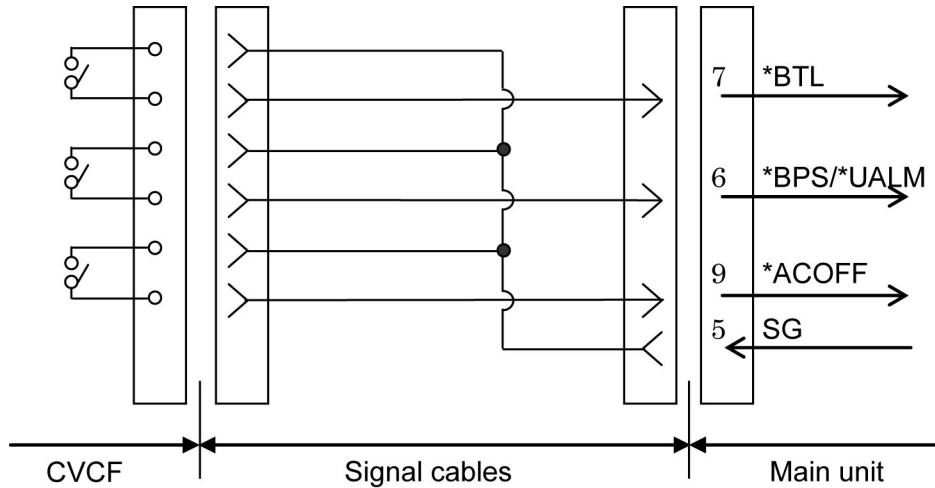
FIGURE B.2 Connection of the main unit and CVCF

TABLE B.1 Signal line definitions

Signal name	Pin	Function
*BPS/ *UALM	6	Hardware abnormality signal When this signal becomes valid, the PRIMEQUEST notifies the system administrator of a CVCF abnormal condition. When the *ACOFF signal goes ON with the *BPS signal already ON, the system judges that battery-supported operation cannot be executed by the CVCF. In this case, forcible system stop is executed instead of shutdown processing. Stopping operation in this manner may cause damage to the system or data. The signal becomes valid when this line and GND (pin 5) are short-circuited.
*BTL	7	Near-end-of-battery-discharge notification signal The signal on this line notifies the PRIMEQUEST of the approaching end of discharge of the CVCF battery. This signal is used to notify the PRIMEQUEST that the power supply will shortly be stopped because of battery power depletion, when power is being supplied from the CVCF due to a power failure. When the signal goes ON, the system judges that battery-supported operation cannot be executed any longer. In this case, forcible system stop is executed instead of shutdown processing. Stopping operation in this manner may cause damage to the system or data. The signal becomes valid when this line and GND (pin 5) are short-circuited.
*ACOFF	9	Power failure detection signal The signal on this line notifies the PRIMEQUEST that the CVCF has detected a power failure. When the signal becomes valid, the PRIMEQUEST performs automatic shutdown processing.

Signal name	Pin	Function
		The length of the time from when the *ACOFF signal goes ON to when shutdown processing actually starts can be specified from the MMB according to the operation. (*1) The signal becomes valid when this line and GND (pin 5) are short-circuited.
GND	5	Common ground signal

*1: Shutdown Delay after UPS detected AC Failure: There is a possibility that the power failure detection signal will be caused by a momentary power interruption. To be prepared for such cases, the maximum wait time until shutdown can be specified (default value: 5 seconds).

B.4 Cable Connector

This section describes the connector type and the correspondence between the UPC interface and the signal cable pins.

Connector type

D-SUB9 male connector (receptacle: female)

Pin assignment

The figure below shows the UPC interface and pin assignment of the signal cable.

Unused pins (pins 1, 2, 3, 4, and 8 in the FIGURE B.2 Connection of the main unit and CVCF) must not be used.

The pin assignment on the cable side is as shown below.

Pin No.	Signal name
1	---
2	---
3	---
4	---
5	SG
6	*BPS
7	*BTL
8	---
9	*ACOFF

○ SG
○ *BTL
○ *ACOFF
○ *BPS/*UALM
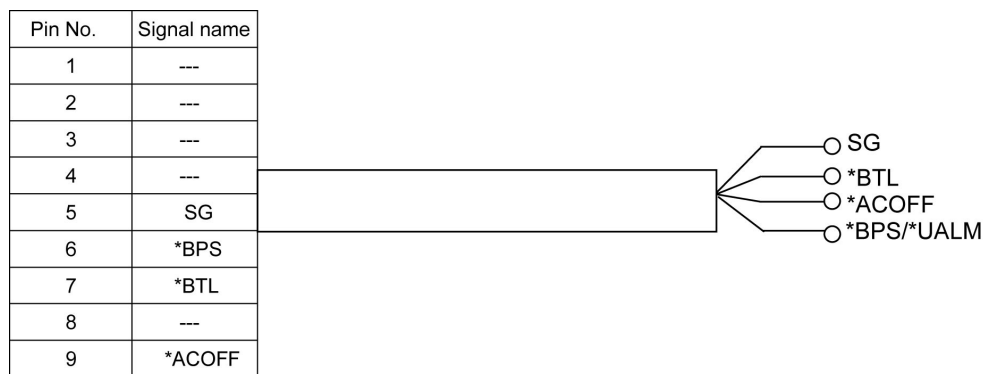
FIGURE B.3 Correspondence between UPC interface and signal cable pins

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